AM-FM STEREO RECEIVER

KR-A56R

SERVICE MANUAL

KENWOOD

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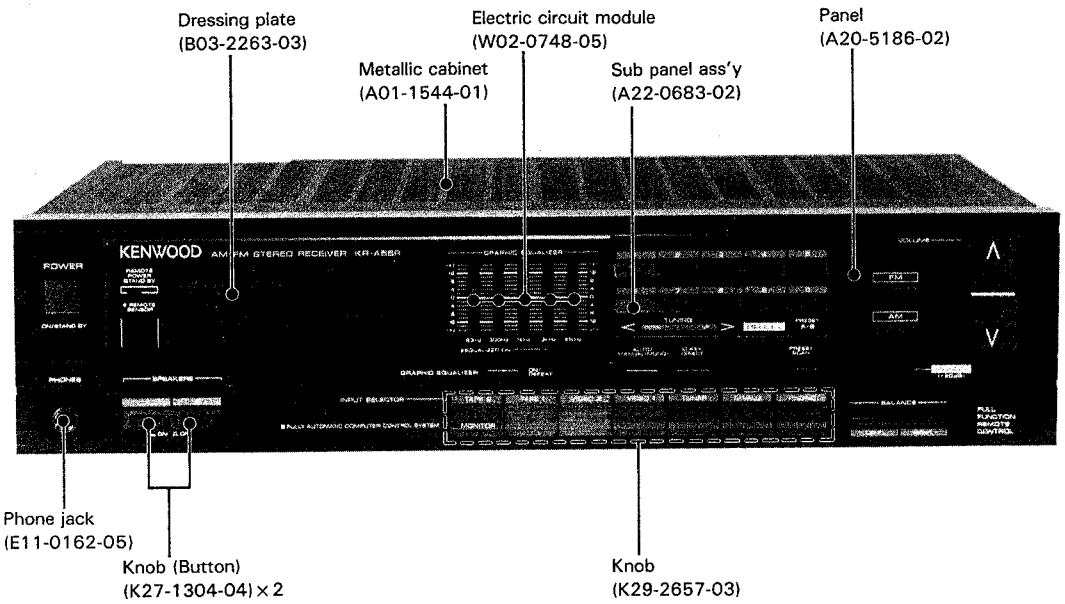

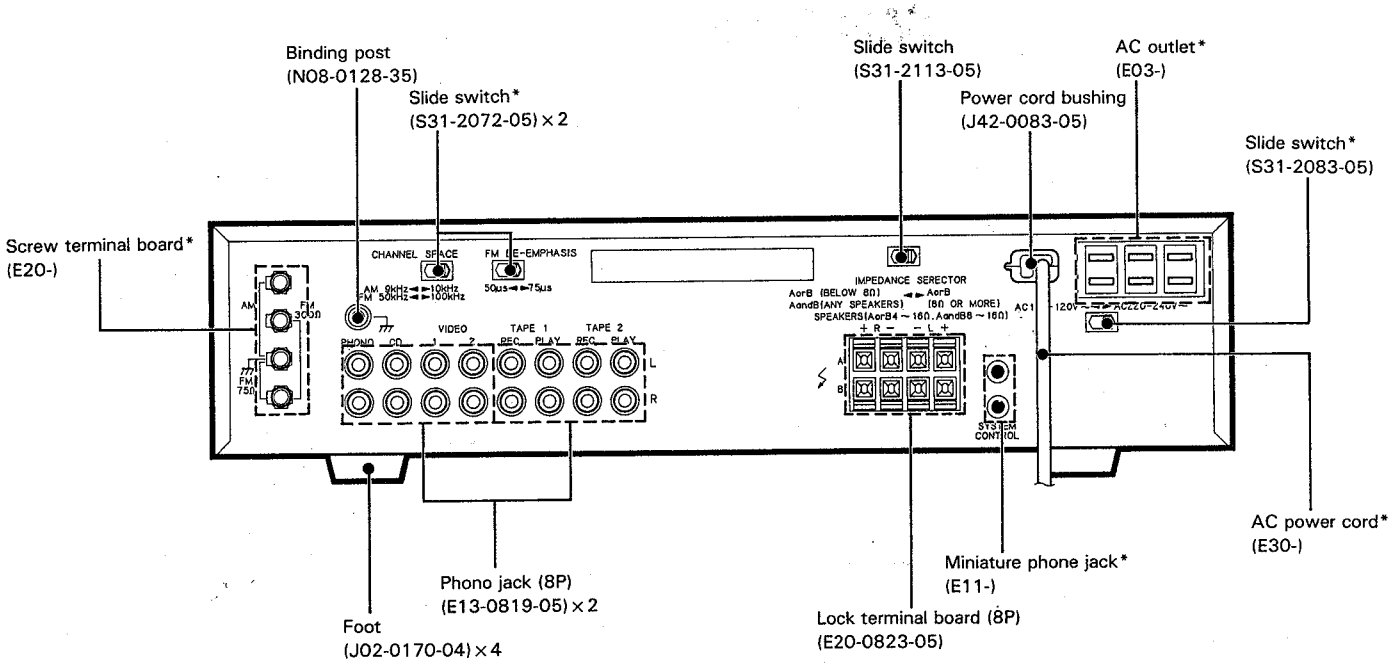

*Refer to parts list on page 40.

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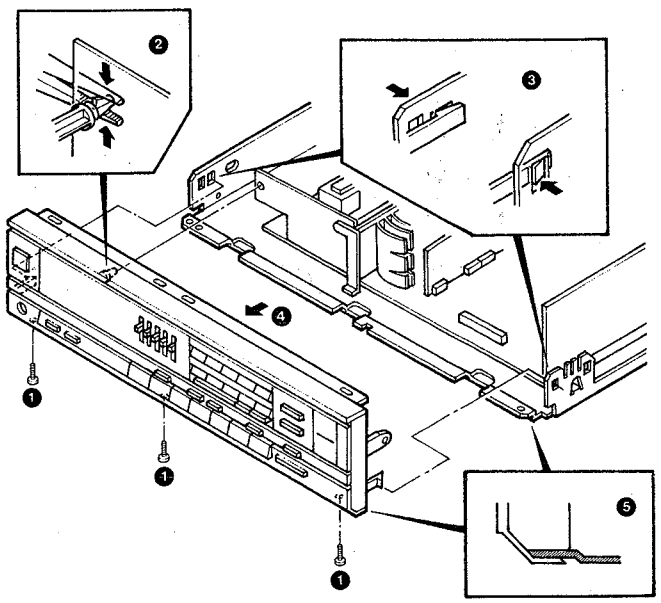
DISASSEMBLY FOR REPAIR

(Remove the metallic cabinet before performing the following operations.)

1. Remove the 3 screws fixing the front panel to the sub panel (❶).
2. Disengage the Tuner Unit (X05-3320-10) (D/4) from the unit holder (❷).
3. Disengage the 2 claws of the sub panel from the chassis (❸).
4. Remove the front panel together with the sub panel, in the direction of the arrow (❹).
5. When installing the front panel, pay attention to the mounting position related to the chassis (❺).

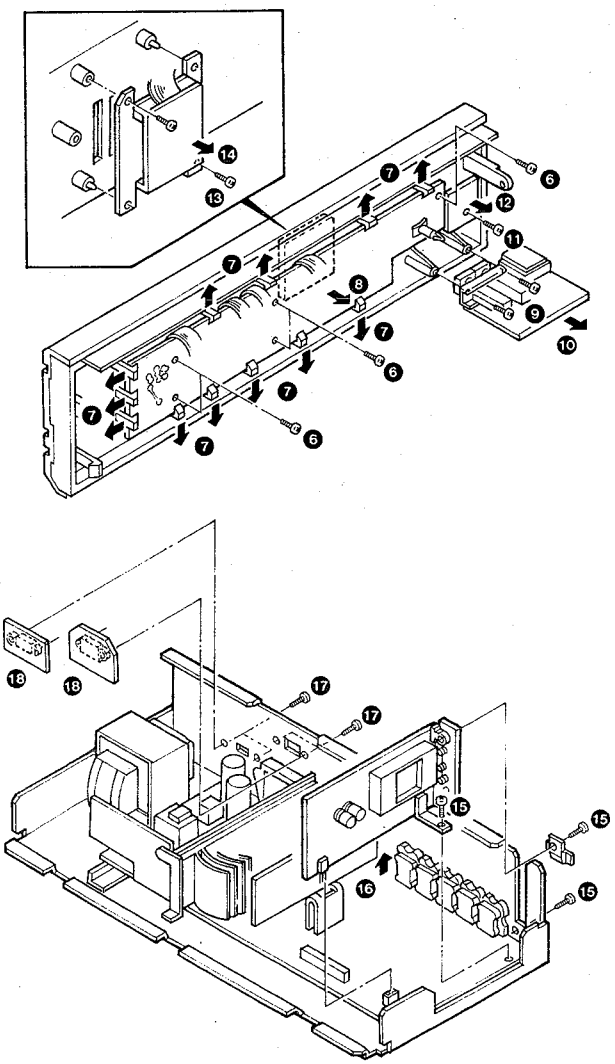


DISASSEMBLY FOR REPAIR

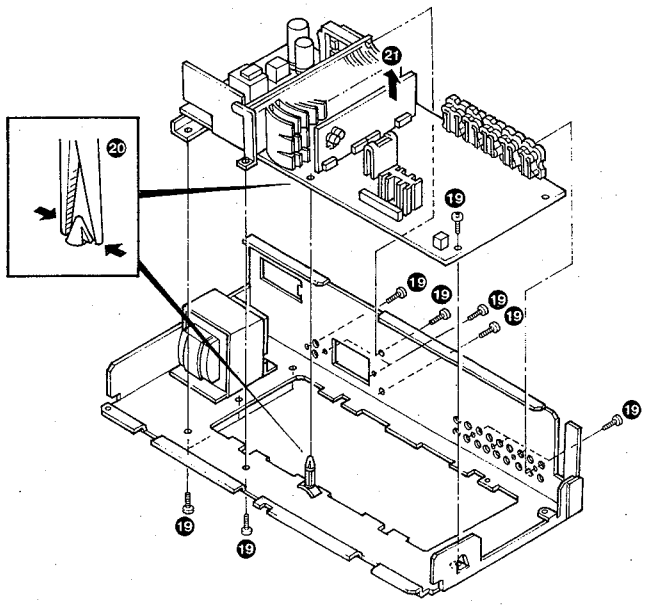
6. Remove the 5 screws fixing the Audio Unit (X09-2390-10) (B/5) to the sub panel (❻).
7. Disengage the 12 claws of the sub panel which retain the Audio Unit (X09-) (B/5) (❼).
8. Remove the Audio Unit (X09-) (B/5) in the direction of the arrow (❽).
9. Remove the 2 screws fixing the multiple push switch (S1) to the sub panel (❾).
10. Remove the Audio Unit (X09-) (D/5) in the direction of the arrow (❿).
11. Remove the screw fixing the Audio Unit (X09-) (C/5) to the sub panel (⓫).
12. Remove the Audio Unit (X09-) (C/5) in the direction of the arrow (⓬).
13. Remove the 2 screws fixing the Graphic Equalizer to the sub panel (⓭).
14. Remove the Graphic Equalizer in the direction of the arrow (⓮).
15. Remove the 2 screws fixing the screw terminal board (E1), and remove the screw fixing the mounting hardware to the Audio Unit (X09-) (A/5) (⓯).
16. Remove the Tuner Unit (X05-) (A/4) in the direction of the arrow (⓰).
17. Remove the 2 screws fixing the Impedance Selector Switch, and remove the 2 screws fixing the Power Type Selector Switch (⓱).

Note: Power Type Selector Switch is equipped with the U, UE and M types.

18. Remove the Impedance Selector Switch and Power Type Selector Switch (⓲).



19. Remove the 14 screws fixing the Audio Unit (X09-) (A/5) (⓳).
20. Disengage the Audio Unit (X09-) (A/5) from the unit holder (⓴).
21. Remove the Audio Unit (X09-) (A/5) in the direction of the arrow (㉑).



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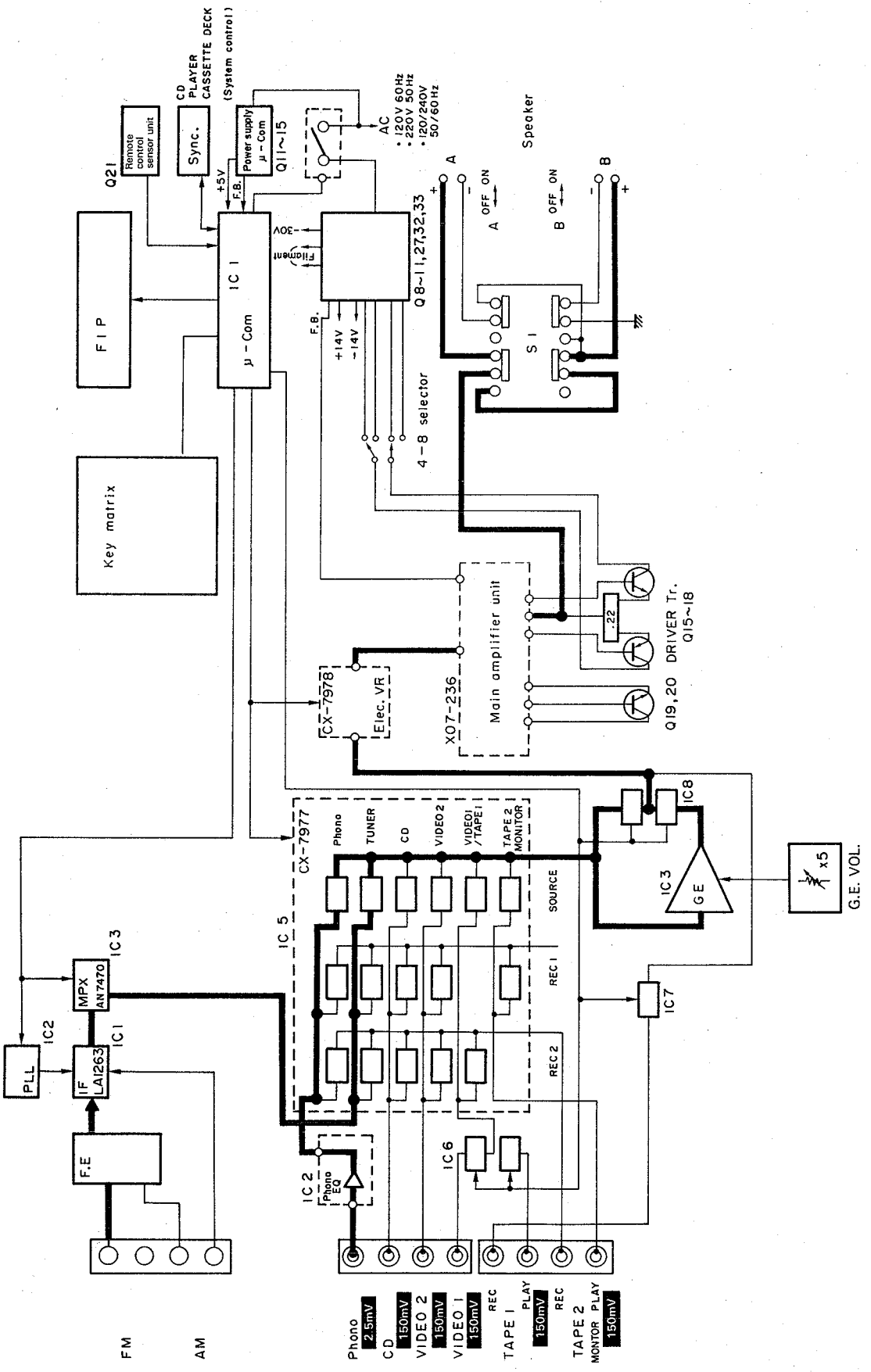
BLOCK & LEVEL DIAGRAM



CIRCUIT DESCRIPTION

DESCRIPTION OF COMPONENTS

Tuner unit (X05-3320-10)

Components	Use/Function	Operation/Condition/Interchangeability
Q1	FM IF amplifier	
Q2	Buffer	
Q3, 4	PLL L.P.F.	
Q5, 6	FM +B control	
Q7, 8	AM +B control	
Q11		
Q12, 13, 16	Relay driver	
Q14	−30 V constant voltage	
Q15	+5.6 V constant voltage	
IC1	FM IF detector	
IC2	PLL	
IC3	FM MPX	
D1	AM variable capacitor	
D2, 3	Static electricity protection	
D4	+5 V constant voltage	
D5	SD/Tune	
D6, 7	Forced to mono out of band range	
D8	Forced to mono	
D9	Beacon	
D10	AM VCO killer	
D11		
D12	+5.6 V constant voltage	
D13	−30 V constant voltage	
D14		
D15, 16	Mute control	

Audio unit (X09-2390-10)

Components	Use/Function	Operation/Condition/Interchangeability
Q1, 2	Control of IC6 and IC7	
Q3~5	Selector output muting	
Q6, 7	Control of IC8	
Q8~10	Positive regulated voltage	
Q11, 27, 32, 33	Negative regulated voltage	
Q12~14	Amplifier input muting	
Q15~18	Power transistors of main amplifier	
Q19, 20	Main amplifier temperature compensation	
Q22	Microprocessor resetting	
Q23, 24	FL tuning ST lighting	
Q25, 26	FL buffer	
Q28	Graphic equalizer LED ON/OFF	

CIRCUIT DESCRIPTION

Components	Use/Function	Operation/Condition/Interchangeability
Q29	U/UE type channel space switching	
Q30~32	Tuner output muting	
IC1	Microprocessor	
IC2	Phono equalizer	
IC3	Graphic equalizer buffer	
IC4	Preamp of main amplifier	
IC5	Input switching	
IC6	TAPE 1/VIDEO switching	
IC7	TAPE 1 REC OUT ON/OFF	
IC8	Graphic equalizer ON/OFF	
IC9	Electronic volume controller	

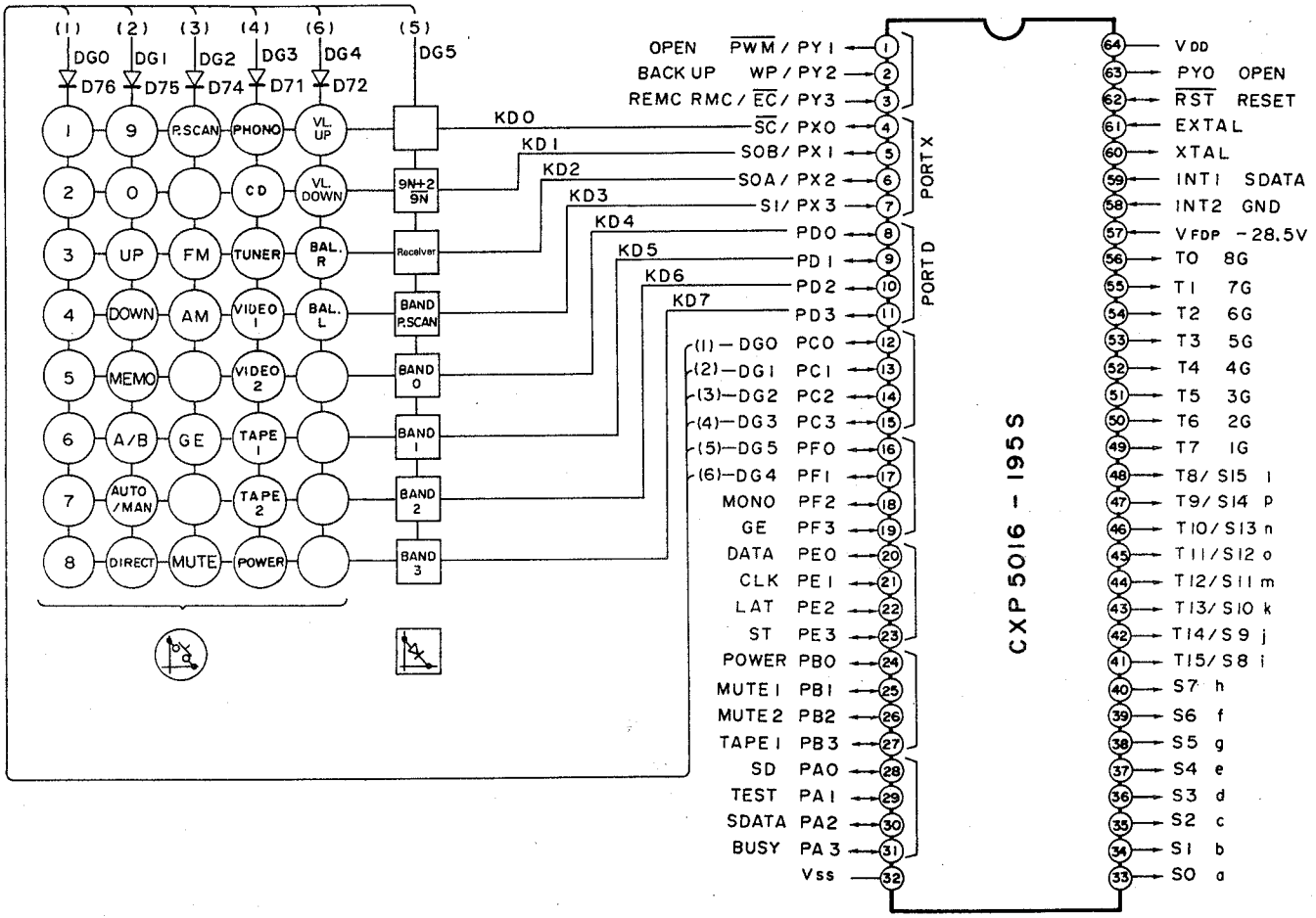
Power amplifier unit (X07-2360-11)

Components	Use/Function	Operation/Condition/Interchangeability
Q1~4	Differential amp	First stage.
Q5~8	Differential amp	Class A amplifier.
Q9, 10	Regulated power supply	Current Miller.
Q11~14	Predriver	Darlington.
Q15, 16	Protection	Current detection.
Q17	Protection	Driver.
Q18	Muting control	Switching ON/OFF of positive power supply for the first stage.
Q19	Ripple filter	

CIRCUIT DESCRIPTION

IC1: CXP5016-195S (X09-2390-10)
MICROPROCESSOR IC

Key matrix connection



Diode Switch Function

Version selection and function setting switch for each model (K and E types).

Model for designated area	Setting switch				BAND	Receiving frequency range	Channel spacing	Reference frequency	Intermediate frequency
	Band 3	Band 2	Band 1	Band 0					
K	1	0	0	0	FM	87.5 ~ 108 MHz	100 kHz	50 kHz	10.7 MHz
					AM	530 ~ 1610 kHz	10 kHz	10 kHz	450 kHz
E	1	1	0	0	FM	87.5 ~ 108 MHz	50 kHz	50 kHz	10.7 MHz
					AM	531 ~ 1602 kHz	9 kHz	9 kHz	450 kHz

Setting switch for K and E type models

- Band 3 H: Overseas model
- Band 2 H: FM channel spacing 50 kHz, AM channel spacing 9 kHz
  L: FM channel spacing 100 kHz, AM channel spacing 10 kHz
- Band 1 L: With auto tuning function
- Band 0 L: Display (FM, AM)

CIRCUIT DESCRIPTION

Diode switch function and power ON initializing function

- **Diode switch function**

9N + 2/9N select in LW mode
Preamp/receiver select
Band preset scan ON/OFF select
Version selection and function setting switch

- **Power-On Initialization**

When the AC power supply is turned on while the TUNER key (or MEMORY key) is held depressed, the whole content of the backed-up memory is cleared (returning to the First mode).

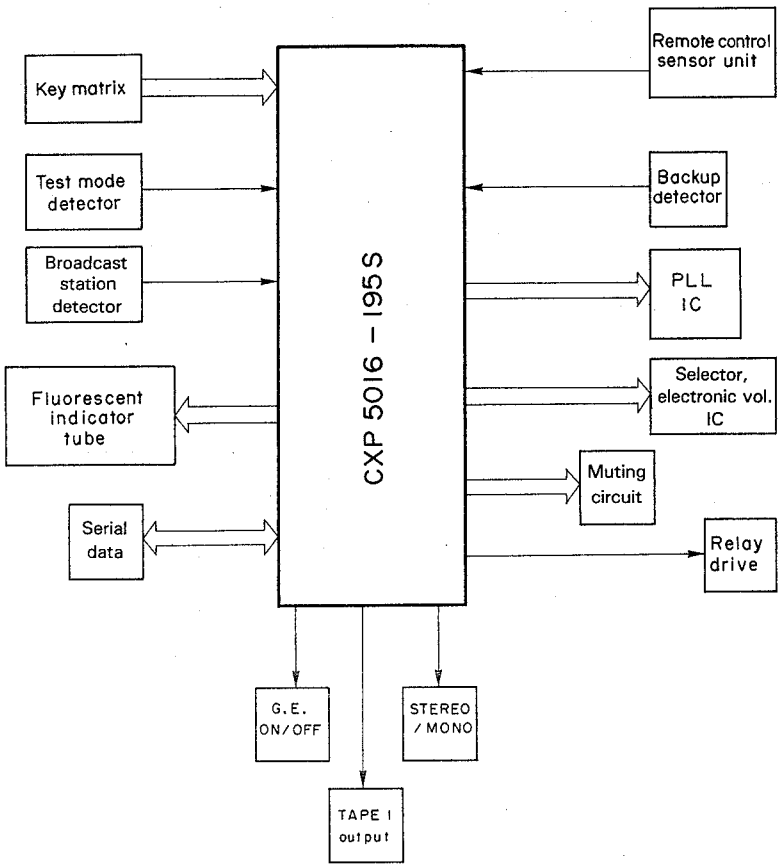
- Selector: TUNER
- Electronic volume control: −50 dB
- Balance: Center
- Muting: OFF
- TAPE 2 MONITOR: OFF

Terminal function

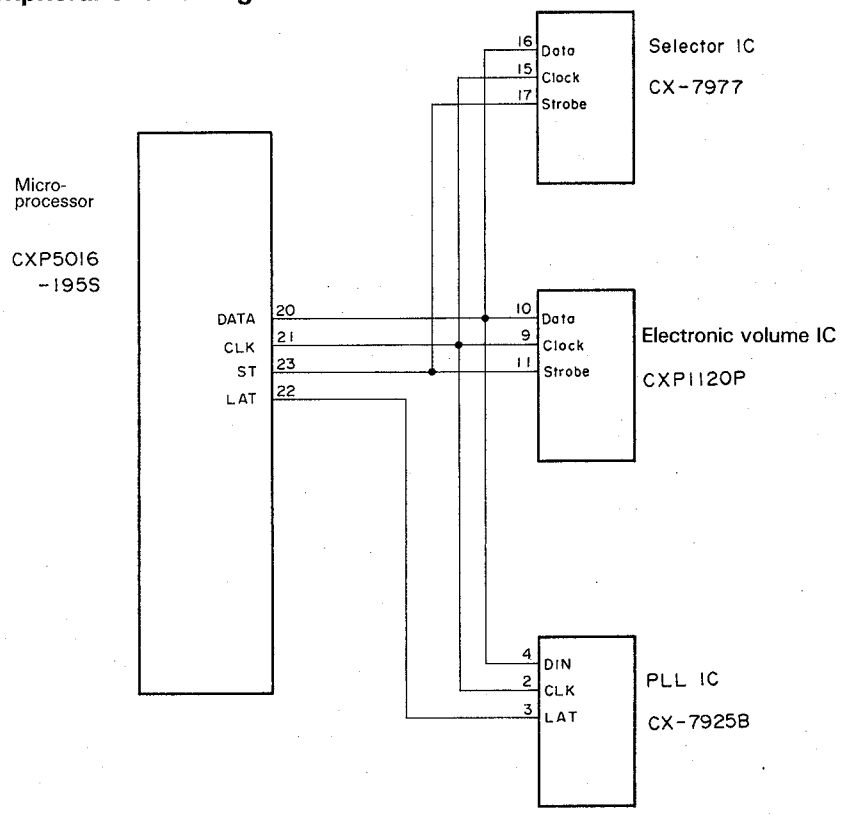
Pin No.	I/O	Name	Function
1	O		Permanently H. Set to Open in actual operations.
2	I	$\overline{\text{BACK UP}}$	Normally H is input. When L is input, the microprocessor stops oscillation and enters the backup mode. The backup mode is released when the input returns from L to H.
3	I	$\overline{\text{REMC}}$	Remote control signal input. L active.
4 ~ 11	I	KD0 ~ KD7	Key return signal inputs. H active.
12 ~ 15 17	O	DG0 ~ DG3 DG4	Key digit outputs. Normally H output. Key scanning occurs when a key is pressed on.
16	O	DG5	Digit output for diode switch function. H output when AC power supply is turned on.
18	O	MONO	Forced mono output pin. When the selector is set to TUNER, and FM/Stereo is selected, outputs a "L" signal. Outputs a "H" signal in all other modes.
19	O	GE	Graphic equalizer ON/OFF output. "H" when the graphic equalizer is ON.
20	O	DATA	Serial data output from controlling CX-7977 (selector IC), CX-7978 (electronic volume control) and CX-7925B (PLL IC). Latched at the rise of CLK.
21	O	CLK	Shift clock output for transmitting data to CX-7977, CX-7978 and CX-7925B. Data is latched at the rise of CLK.
22	O	LAT	Data output latch for the CX-7925B. Latched at the rising edge.
23	O	ST	Data latch output for CX7977 and CX7978. Data is latched at the rise.
24	O	POWER	Relay ON/OFF port. H for relay ON.
25	O	$\overline{\text{MUTE 1}}$	Line output muting terminal. L for muting.
26	O	$\overline{\text{MUTE 2}}$	TAPE 2 REC output muting terminal. L for muting.
27	O	TAPE 1	Selector TAPE 1 terminal. H when TAPE 1 is selected.
28	I	SD	Active "H" when a broadcast station is present.
29	I	$\overline{\text{TEST}}$	Test mode setting terminal. Test mode occurs when AC power supply is turned on with L.
30	O	SDATA	Serial data output.
31	I/O	BUSY	Serial BUSY terminal.
32	—	VSS	GND.
33 ~ 48	O	a ~ p	FL drive segment terminals.
49 ~ 56	O	1G ~ 8G	FL drive digit terminals. 244μ × 8 digit = Sync.
58	I		Not used. To be short-circuited with VSS or VDD.
59	I	SDATA	Serial data input. In use, short-circuit with pin 30.
63	O		Permanently H. Set to Open in actual operations.
64	—	VDD	+5V.

CIRCUIT DESCRIPTION

Microprocessor IC peripheral block diagram

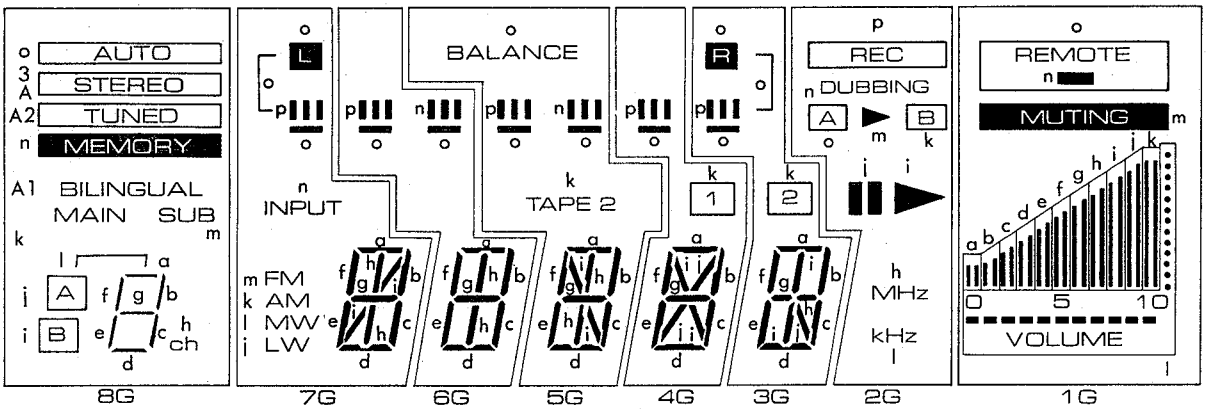


Microprocessor IC peripheral circuit diagram



CIRCUIT DESCRIPTION

FL display (FIP8BMW24)



Terminal connection

Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Electrode	F	F	NP	8G	P(A1)	P(A2)	P(A3)	8G	P(a)	P(b)	7G	P(l)	6G	P(p)	5G	P(n)	P(o)	P(m)
Terminal No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Electrode	P(k)	5G	4G	P(j)	P(l)	3G	P(i)	2G	P(h)	P(f)	P(g)	2G	P(e)	1G	P(d)	P(c)	P(b)	1G
Terminal No.	37	38	39															
Electrode	P(a)	F	F															

Notes F: Filament NP: No Pin G: Grid P: Anode

Test Functions

When the Acc power supply is turned on with the TEST pin (pin 29) short-circuited with the GND, the unit is switched on in the Test mode. In this mode, all FL display tubes are lit. In test mode, the test frequency is automatically stored in memory. Pressing the VOLUME UP/DOWN keys changes the sound level in discontinuous steps between −78 dB←→−26 dB←→0 dB, and pressing the BALANCE L/R keys changes the balance discontinuously between L←→CENTER←→R. The band preset scan is automatically set to the effective (valid) mode, and is convenient for recalling the test frequency.

CIRCUIT DESCRIPTION

Operation Transition Chart

Key Pressed / Current Mode	POWER	PHONO CD VIDEO 1 VIDEO 2 TAPE 1	TUNER	TAPE 2	VOLUME UP/DOWN	BALANCE L/R	GRAPHIC EQUALIZER	MUTING	10 KEY	FM	AM	FREQUENCY UP/DOWN	PRESET SCAN	A/B SELECTION	AUTO/ MANUAL	MEMORY	DIRECT
Immediately after power on (SELECTOR: TUNER)	Power turned OFF, FL turned OFF.	Switched to corresponding input.	No change.	TAPE 2 monitoring. No change in TAPE 2 REC OUT.	Volume changed up or down, with dB indicated.	Balance moved left or right, with BALANCE displayed.	Turns OFF when the graphic equalizer is ON, and turns ON when it is OFF.	−20 dB muting, with MUTING indicator flashing.	Recalls the preset memory.	Switches the receiving band to FM.	Switches the receiving band to AM.	Moves the receiving frequency upward/ downward.	Activates the preset scan.	Alternates the preset function between A and B.	Alternates the tuning mode between AUTO and MANUAL.	Enables the preset memory, and lights the MEMORY indicator.	Enables direct input of the frequency.
SELECTOR position: Other than TUNER	↑	↑	Switched to TUNER.	↑	↑	↑	↑	↑	(Switches the selector to TUNER.)	(Switches the selector to TUNER.)	(Switches the selector to TUNER.)	No change.	←	←	←	←	←
TAPE 2 monitoring	↑	TAPE 2 monitoring unchanged. TAPE 2 REC OUT switched.	←	TAPE 2 monitoring canceled, and switched to current selector source.	↑	↑	↑	↑	Switches the REC OUT source of TAPE 2 with TAPE 2 monitor left as it is.	←	←	Moves the frequency upward/downward when the selector is set to TUNER.	Activates the preset scan when selector is set to TUNER.	Alternates preset function between A and B when selector is set to TUNER.	Alternates tuning system between AUTO and MANUAL when selector is set to TUNER.	Enables the preset memory operation when selector is set to TUNER.	Enables direct input of the frequency when selector is set to TUNER.
During frequency moving up/down	↑	Switched to corresponding input.	No change.	TAPE 2 monitoring. No change in TAPE 2 REC OUT.	Volume changed up or down, but dB not indicated.	↑	↑	↑	Recalls the preset memory.	No change when the same band as the current one is selected. If the different band is selected, receiving band is switched to FM.	No change when the same band as the current one is selected. If the different band is selected, receiving band is switched to AM.	Frequency is moved up or down according to the button pressed.	Activates the preset scan.	Alternates the preset function between A and B.	Alternates the tuning mode between AUTO and MANUAL.	No change.	←
During preset scan	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Moves the receiving frequency upward/downward.	Preset scan operation is released.	↑	↑	↑	↑
During preset memory (MEMORY indicator is lit)	↑	↑	↑	↑	Volume changed up or down, with dB indicated.	↑	↑	↑	The received frequency is stored in the preset memory corresponding the numeric key pressed.	↑	↑	↑	Activates the preset scan.	↑	↑	↑	Enables direct input of the frequency.
During direct inputting the frequency	↑	↑	↑	↑	Volume changed up or down, but dB not indicated.	↑	↑	↑	The numeric key pressed is directly input.	↑	↑	↑	↑	No change.	↑	↑	Direct input operation is released.
During ERROR indicator flashing after frequency is directly input	↑	↑	↑	↑	↑	↑	↑	↑	Recalls the preset memory.	↑	↑	↑	↑	↑	↑	↑	Enables direct input of the frequency.

CIRCUIT DESCRIPTION

Function & Operation Description

1. Amplifier facilities

- **Input selector function**
  The input sources are selected by pressing the PHONO, CD, TUNER, VIDEO 1, VIDEO 2 and TAPE 1 keys. The selected source is displayed in characters on the FL tube display, at the same time as "INPUT" is illuminated. However, when the selector is set to TUNER, the band corresponding to the frequency and the AUTO indicators are displayed. The A/B indication and preset channel display are always visible. The INPUT SELECTOR is not accepted while TAPE 1 deck is recording, unless during dubbing from deck A to deck B. The selected position is backed up even when the Acc power supply is turned off. If the Acc power is turned on after the specified backup period has passed, TUNER is selected automatically.
  Every time an INPUT SELECTOR key is pressed, the corresponding equipment starts playback.

- **TAPE 2 monitoring**
  When the TAPE 2 key is switched on, the sound of TAPE 2 deck can be monitored regardless of the INPUT SELECTOR position. During TAPE 2 monitoring, the FL tube displays "TAPE 2 MONITOR". TAPE 2 monitoring is canceled by pressing the key again.
  The TAPE 2 key is not accepted during TAPE 1 deck is playing. TAPE 2 monitoring selection is also backed up after power off.

- **Electronic volume control**
  The volume is increased or decreased by ±2 dB each time the VOLUME UP/DOWN switch is pressed. Holding the switch depressed varies the volume continuously. When the switch is pressed, the volume setting is indicated graphically on the FL tube display. The volume display characters returns to the previous display after three seconds.
  During moving the frequency up or down, a preset scan operation, a direct frequency input operation, or when the direct ERROR indicator lights, the volume figures are not displayed.
  The volume control range is from 0 dB to −78 dB. −78 dB is the sound muting condition. The electronic volume setup is also backed up and, after the backup period, the setup when power is turned on is −50 dB.

- **Electronic balance control**
  Each time the BALANCE L/R switch is pressed, the sound level of the corresponding channel is reduced by −2 dB. The balance position is shown on the FL tube display. The balance control is provided in 10 steps for each of the L and R channels. At the Leftmost or Rightmost position, the level of the other channel becomes −78 dB. The electronic balance setup is also backed up.

- **Muting**
  Pressing the MUTING switch on mutes the sound level by −20 dB. The "MUTING" is flashes on the FL tube display at this time. The muting is canceled by pressing the switch again. The muting setup is also backed up.

- **Graphic Equalizer ON/OFF function**
  Pressing the graphic equalizer switch turns the graphic equalizer function ON and lights the graphic equalizer LED. Pressing the switch again will turn the graphic equalizer function OFF. The graphic equalizer ON/OFF operation is backed up.

- **Power ON/OFF**
  When the POWER switch is pressed, the high-voltage line is activated and the FL tube display appears in 0.5 second. The sound is muted for 4.5 second after power is turned on, with the volume display graphics flashing. When the POWER switch is turned off from on, all functions used are stored in memory. The power ON/OFF setup is also backed up.

2. Tuner functions

- **Band select function**
  When the FM or AM key is pressed, the display is changed to the corresponding band and frequency. When the band key which is the same as the currently selected one is pressed, it does not function (it is invalid), except when in the band preset scan effective mode. When a band key is pressed, the input selector is automatically changed to TUNER. When the TAPE 1 deck is recording, the band keys do not function.

- **Band preset scan function**
  In test mode, or in band preset scan effective mode, when the band key which is the same as the current band is pressed, only the stations in the corresponding band, from among the preset stations, are searched and received. Each time the key is pressed, the receiving station is changed to the next station.

- **Frequency UP/DOWN function**
  If the input selector is set to TUNER and the frequency UP/DOWN key is pressed, the receiving frequency is moved up or down. If AUTO tuning mode, frequency movement stops at the point where a station is present. In MANUAL mode, the frequency is moved up or down as long as the UP/DOWN key is pressed.

- **Preset memory function**
  Up to 10 station frequencies can be preset into each A and B channel (20 stations in total). AM and FM stations can be preset randomly.
  To store a station frequency, first tune-in the desired frequency and then press the MEMORY key. The MEMORY indicator in the FL display will blink. While it is blinking, select preset channel A or B with the A/B select key, and the designate the channel number with the numeric (digit) keys. When the frequency is memorized, the MEMORY indicator goes off. Preset memory is effective only when the input selector is set to TUNER.

- **Preset recall function**
  To recall a preset station, press the corresponding numeric (digit) key. Pressing a numeric key automatically switches the input selector to TUNER even when an other source is selected. When the TAPE 1 deck is used for recording, preset recall using the numeric (digit) key is impossible.

- **Preset channel A/B select function**
  When storing a station into preset memory, or when recalling a preset station, first select preset channel A or B with the A/B select key. The A/B select key does not function when the input selector is set to a source other than TUNER.

- **Preset scan function**
  When the preset scan key is pressed, each station in the preset memory is received for 5 seconds sequentially. However, when no station is present at the preset frequency, the receiving period is only 1 second. The preset scan key does not function when the input selector is set to a source other than TUNER.

- **Auto/manual selection**
  When moving the frequency up/down, first select automatic or manual tuning mode with the AUTO/MANUAL key. When AUTO mode is selected, the AUTO indicator lights and the frequency movement (up or down) automatically stops at the point where a broadcast station is present. If the band is set to FM at this time, Stereo mode is automatically selected (if a stereo broadcast is present). When MANUAL mode is selected, the frequency is moved up or down continuously while the frequency UP/DOWN key is pressed. In FM mode, the receiving status is set to mono. The AUTO/MANUAL select key does not function when the input selector is set a source other than TUNER.

- **Direct input function**
  When the input selector is set to TUNER, pressing the DIRECT key enables the direct input of the frequency. When the direct frequency input function is engaged, a bar ("—") blinks in the column to be input in the FL display. Once the complete frequency is input, using the corresponding numeric (digit) keys, the designated station is received. If the input frequency is out of the bands receiving range, the frequency display blinks for 5 seconds (ERROR display), then the previous display resumes. If the DIRECT key is pressed again when entering the frequency, the direct input function is released and the previous display (the indication before the DIRECT key was pressed the first time) resumes.

3. Frequency setting for tuner adjustment

Random 20-station memory: When both FM and AM bands are provided

K-type	FM	87.5, 89.1, 90.0, 92.0, 94.0, 98.0, 100.1, 102.0, 106.0, 108.0 MHz
	AM	530, 630, 990, 1440, 1610 kHz
E-type	FM	87.5, 89.1, 90.0, 92.0, 94.0, 98.0, 100.1, 102.0, 106.0, 108.0 MHz
	AM	531, 630, 990, 1440, 1602 kHz

4. System operation facilities

- **Easy operation (synchro operations)**
  The playback of required equipment can be started by just pressing the corresponding INPUT SELECTOR key. In addition, playing a source equipment switches the INPUT SELECTOR automatically. However, this does not occur during recording with TAPE 1 deck.

- **Remote control operation**
  The remote control unit allows the control of following operations.

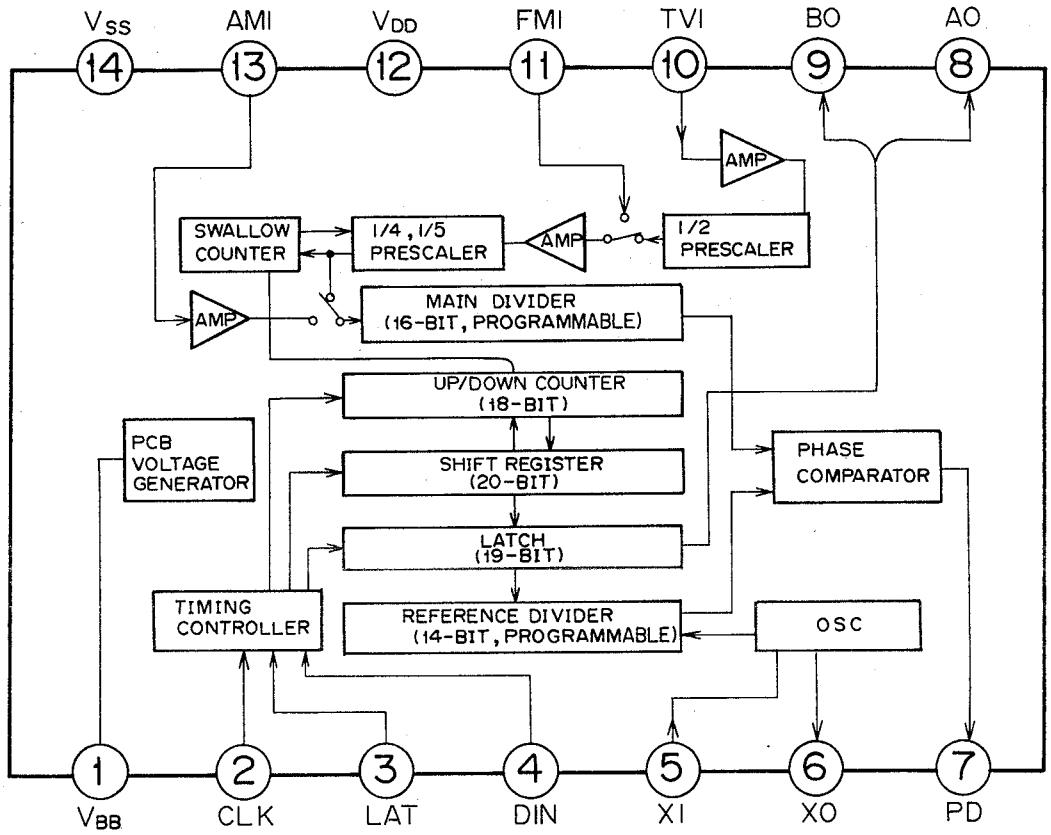
Numeric keypad:	Functions as the tuner's keypad when the INPUT SELECTOR is set to TUNER, and as the CD player's keypad when it is set to CD.
CD:	▷/▯▯, □, ⏮, ⏭
TUNER:	Direct selection, A/B switching, preset station scan, FM, AM
TAPE A:	◁, ▷, ◁◁, ▷▷, ○, □, ▯▯
TAPE B:	◁, ▷, ◁◁, ▷▷, ○, □, ▯▯
PHONO:	▷, □
AMP:	VOLUME UP/DOWN, MUTING, PHONO, CD, TUNER, VIDEO 1, VIDEO 2, TAPE 1 , TAPE 2

- **Operation indicators**
  With the CD player or turntable, "▷" on the FL tube display lights when playing starts, and "▯▯" lights when in the Pause or Cuing mode. With TAPE 1 decks, "A" lights when deck A is played and "B" lights when deck B is played. "REC" lights during recording of deck A or B, and "DUBBING A ► B" lights during dubbing from deck A to deck B.

CIRCUIT DESCRIPTION

IC2: CX7925B (X05-3320-10) PLL

Block diagram and terminal configuration diagram



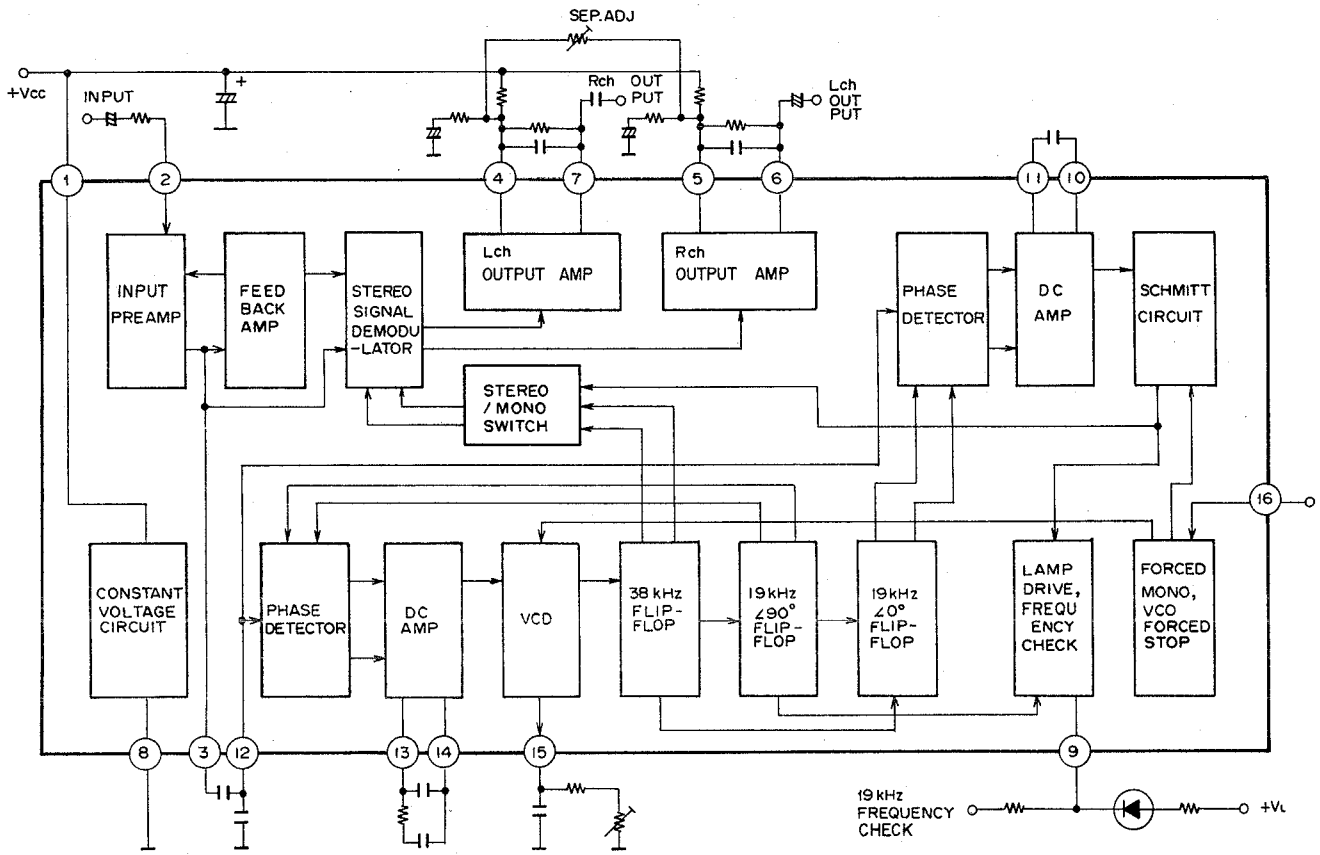
Terminal description

Terminal No.	Symbol	Terminal Description
1	VBB	PCB terminal (Connect a 0.01 μF capacitor between the GND).
2	CLK	Input terminal for the clock used for 20-bit serial data input (Shifted at the rise).
3	LAT	Input terminal for the shift register input data latch signal (shifted at the rise) and, at the same time, for the Up/Down clock (status changed at the rise).
4	DIN	Data input terminal, also the Up/Down mode switching terminal (Up mode with "H" level, Down mode with "L" level).
5	XI	Connection terminals for the reference signal generator X'tal oscillator. (Max. 13 MHz, standard 4.0 MHz)
6	XO	
7	PD	Phase comparator output terminal (3-state).
8	AO	External control signal output terminal/Unlock signal output terminal (E/E MOS push-pull).
9	BO	External control signal output terminal/data check terminal (E/E MOS push-pull).
10	TVI	High-frequency signal input terminal (300 MHz or 350 MHz max.). With 1/2 prescaler.
11	FMI	High-frequency signal input terminal (150 MHz or 180 MHz max.).
12	VDD	Power supply (+5V).
13	AMI	High-frequency signal input terminal (40 MHz or 50 MHz max.).
14	VSS	Grouding terminal

CIRCUIT DESCRIPTION

IC3: AN7470 (X05-3320-10) FM MPX

Equivalent block diagram



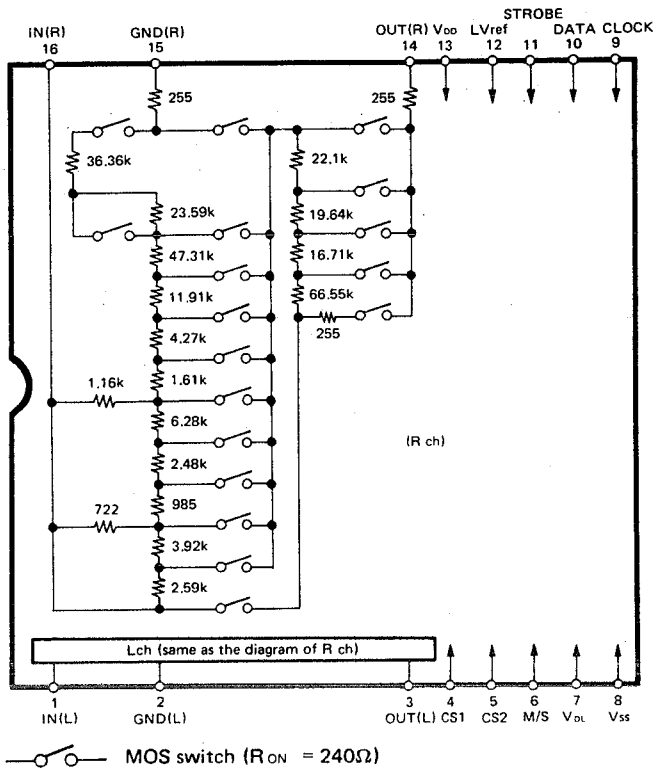
Terminal connection and functions

Terminal No.	Connection/Function
1	Supply voltage (+Vcc)
2	Stereo composite signal, input terminal
3	Input preamp, output terminal
4	L CH output amp, feedback terminal
5	R CH output amp, feedback terminal
6	R CH output amp, output terminal
7	L CH output amp, output terminal
8	Grounding terminal
9	Stereo display lamp drive and 19 kHz frequency check terminal
10	Stereo signal detector circuit, low-pass filter terminal
11	Stereo signal detector circuit, low-pass filter terminal
12	PLL circuit, input terminal
13	PLL circuit, low-pass filter terminal
14	PLL circuit, low-pass filter terminal
15	VCO freerun oscillation frequency adjustment terminal
16	Forced mono/forced VCO oscillation stop terminal

CIRCUIT DESCRIPTION

IC9: CXD1120P-1 (X09-2390-10) ELECTRONIC VOLUME CONTROLLER

Equivalent Circuit Diagram



Terminal Description

Terminal No.	Symbol	I/O	Description
1	IN (L)	I	Audio signal inputs.
16	IN (R)	I	
2	GND (L)		Reference voltage (0V) for the L and R channel audio signals.
15	GND (R)		
3	OUT (L)	O	Audio signal outputs.
14	OUT (R)	O	
4	CS1	I	Chip select terminals which select this chip when the levels of the serial data bits (9), and (10) agree with
5	CS2	I	those of them; CS1 = bit (9) and CS2 = bit (10), where level "0" = Vss and level "1" = V_{DL} or open.
6	M/S	I	Serial data input mode select terminal. The IC expects 8-bit input when this terminal is held at the Vss level while it expects 11-bit input when the terminal is open or at the V_{DL} level.
7	V_{DL}		Logic power supply (Vss = + 5V).
8	Vss		IC substrate potential (−14V).
9	Clock	I	Serial data read clock terminal which provides 8 or 11 read clock pulses at the rise edge of which 8 or 11 data bits are respectively read.
10	Data	I	8- or 11-bit serial input data.
11	Strobe	I	This pulse latches at its rise edge the serial data read in the analog switch status setting pulse (single e pulse) IC which make appropriate switches.
12	L Vref	I	Sets the input level of the control signals (Clock, Data, and Strobe).
13	V_{DD}		Switch driver power supply (+ 14V).

CIRCUIT DESCRIPTION

Control Data Bit Assignments

8-bit configuration (M/S = Vss)

8	7	6	5	4	3	2	1
R̄	L̄	8dB Step Data				2dB Step Data	

11-bit configuration (M/S = OPEN or V_{DL})

11	10	9	8	7	6	5	4	3	2	1
1	CS2	CS1	R	L	8dB Step Data				2dB Step Data	

8bit (M/S : "L")

Position	Bit 8	7
L + R	0	0
R	0	1
L	1	0
No change	1	1

11bit (M/S : "H")

Position	Bit 8	7
No change	0	0
L	0	1
R	1	0
L + R	1	1

*

Position	Bit 2	1
0dB	0	0
2dB	0	1
4dB	1	0
6dB	1	1

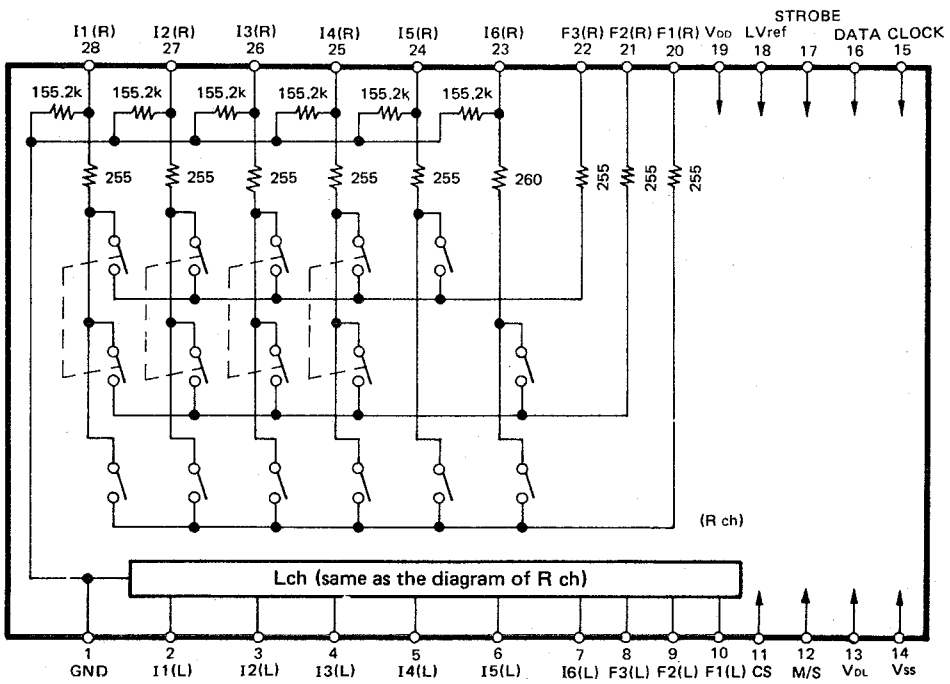
*

Position	Bit 6	5	4	3
0dB	0	0	0	0
8dB	0	0	0	1
16dB	0	0	1	0
24dB	0	0	1	1
32dB	0	1	0	0
40dB	0	1	0	1
48dB	0	1	1	0
56dB	0	1	1	1
64dB	1	0	0	0
72dB	1	0	0	1
∞	1	0	1	0

* The attenuation is the sum of the 8-dB and 2-dB increments.

IC5: CX7977 (X09-2390-10) SELECTOR

Equivalent Circuit Diagram



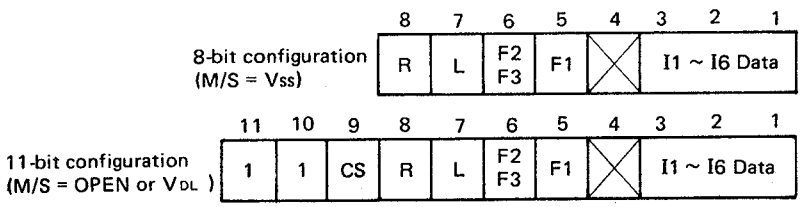
MOS switch (R_{ON} = 240Ω)
F2 and F3 switches work in conjunction.

CIRCUIT DESCRIPTION

Terminal Description

Terminal No.	Symbol	I/O	Description
1	GND		Audio signal reference potential (0V).
2~7	I1(L)~I6(L)	I	L-channel audio signal input terminals (6 lines).
8~10	F3(L)~F1(L)	O	L-channel audio signal output terminals (3 lines).
11	CS	I	Chip select terminal selects this IC when the level of the serial data bit (9) agrees with that of this terminal; i.e., CS = bit (9), where level "0" = Vss and level "1" = V_{DL} or open.
12	M/S	I	Serial data input mode select terminal. The IC expects 8-bit input when this terminal is held at the Vss level while it expects 11-bit input when the terminal is open or at the V_{DL} level.
13	V_{DL}		Logic power supply (Vss = + 5V).
14	Vss		IC substrate potential (−14V).
15	Clock	I	Serial data read clock terminal which provides 8 or 11 read clock pulses at the rise edge of which 8 or 11 data bits are respectively read.
16	Data	I	8- or 11-bit serial input data.
17	Strobe	I	This pulse latches at its rise edge the serial data read in the analog switch status setting (single pulse) IC which make appropriate switches.
18	L Vref	I	Sets the input level of the control signals (Clock, Data, and Strobe).
19	V_{DD}		Switch driver power supply (+ 14V).
20~22	F1(R)~F3(R)	O	R-channel audio signal output terminals (3 lines).
23~28	I6(R)~I1(R)	I	R-channel audio signal input terminals (6 lines).

Control Data Bit Assignments



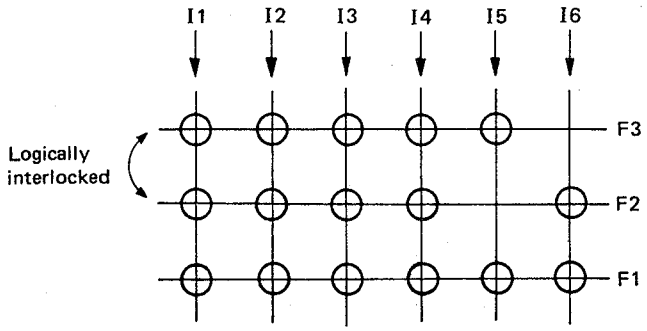
8bit (M/S : "L")

Position	Bit 8	Bit 7
No change	0	0
No change	0	1
No change	1	0
L + R	1	1

11bit (M/S : "H")

Position	Bit 8	Bit 7
No change	0	0
L	0	1
R	1	0
L + R	1	1

* The F2 and F3 output controls are interlocked.
The I5 input signal is never fed through the F2 line.
The I6 input signal is never fed through the F3 line.
This is well illustrated by the following conceptual diagram:



Each ⊕ indicates an equivalent switch.

*

Position	Bit 3	Bit 2	Bit 1
I1	0	0	0
I2	0	0	1
I3	0	1	0
I4	0	1	1
I5	1	0	0
I6	1	0	1

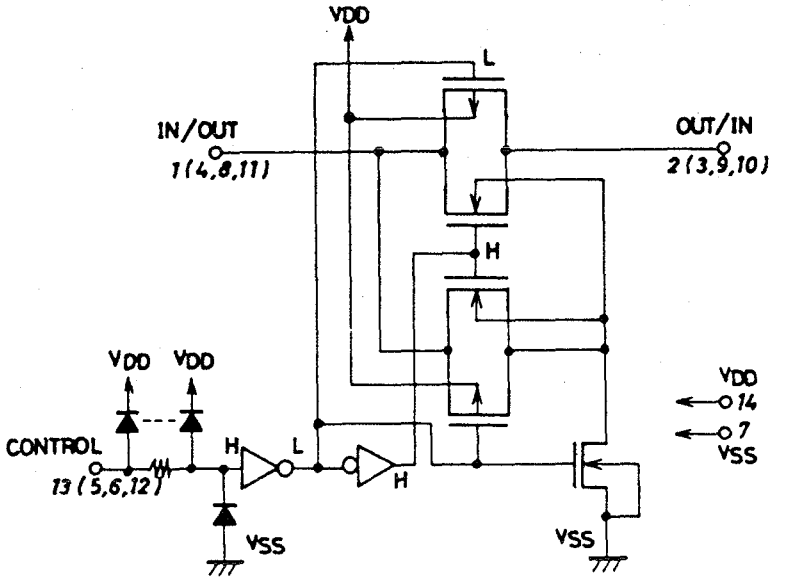
*

Position	Bit 6	Bit 5
No change	0	0
Output F1	0	1
Output F1,F2	1	0
Output F1,F2,F3	1	1

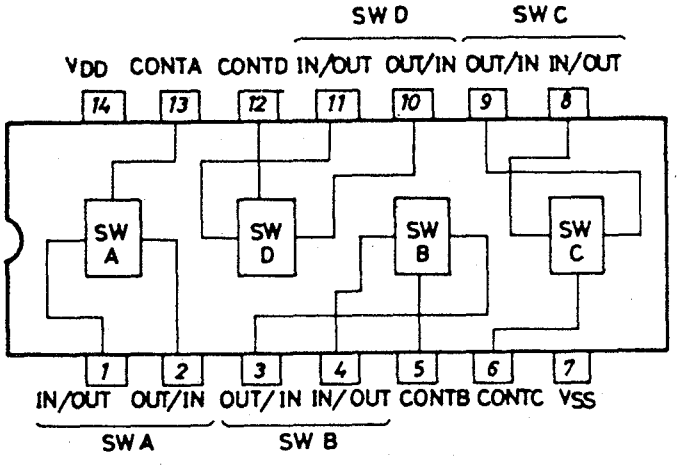
CIRCUIT DESCRIPTION

IC6 ~ 8: LC4966 (X09-2390-10) SELECTOR

Equivalent Circuit



Terminal Description and Equivalent Circuit Diagram



ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION			SELECTOR: FM				
1	DETECTOR	(A) 98.0MHz 1kHz, ±75kHz dev 60dBμ(ANT input)	Connect a DC voltmeter between TP5 and TP6.	AUTO or MONO 98.0MHz	L5 (X05-)	0V	(a)
2	VCO	(A) 98.0MHz 0 dev 100dBμ(ANT input)	Connect a frequency counter between TP8 and GND.	AUTO 98.0MHz	VR3 (X05-)	76.00kHz	(b)
3	SEPARATION (E Type)	(C) 98.0MHz Stereo signal 60dBμ(ANT input)	(B)	AUTO 98.0MHz	VR4 (X05-)	Minimum crosstalk.	
4	TUNING LEVEL	(A) 98.0MHz 0 dev 18dBμ(ANT input)300Ω 14dBμ(ANT input) 75Ω	(B)	AUTO or MONO 98.0MHz	VR2 (X05-)	Adjust VR2 and stop at the point where FL1(TUNED) goes on.	
AM SECTION			Keep the AM loop antenna installed. SELECTOR: AM				
(1)	BAND EDGE (Low)	–	Connect a DC voltmeter between TP3(GND) and TP2.	–	L2 (X05-)	1.5V	(c)
(2)	BAND EDGE (High)	–	Connect a DC voltmeter between TP3(GND) and TP2.	–	TC2 (X05-)	8.0V	(c)
			Repeat alignments (1) and (2) several times.				
(3)	RF ALIGNMENT (1)	(D) 600kHz 20dBμ(ANT input)	(B)	–	L1 (X05-)	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	RF ALIGNMENT (2)	(D) 1400kHz 20dBμ(ANT input)	(B)	–	TC1 (X05-)	Maximum amplitude and symmetry of the oscilloscope display.	
			Repeat alignments (3) and (4) several times.				
(5)	IF TRANSFORMER	(D) 1000kHz 20dBμ(ANT input)	(B)	–	L6 (X05-)	Maximum amplitud and symmetry of the oscilloscope display.	
(6)	TUNING LEVEL	(D) 1000kHz 36dBμ(ANT input)	(B)	–	VR1 (X05-)	Adjust VR1 and stop at the point where FL1(TUNED) goes on.	
AUDIO SECTION							
[1]	IDLE CURRENT	–	(E) Connect a DC voltmeter across CP1(L) CP2(R)	Volume: 0	VR1(L) VR2(R) (X07-)	13mV	(d)

REGLAGES

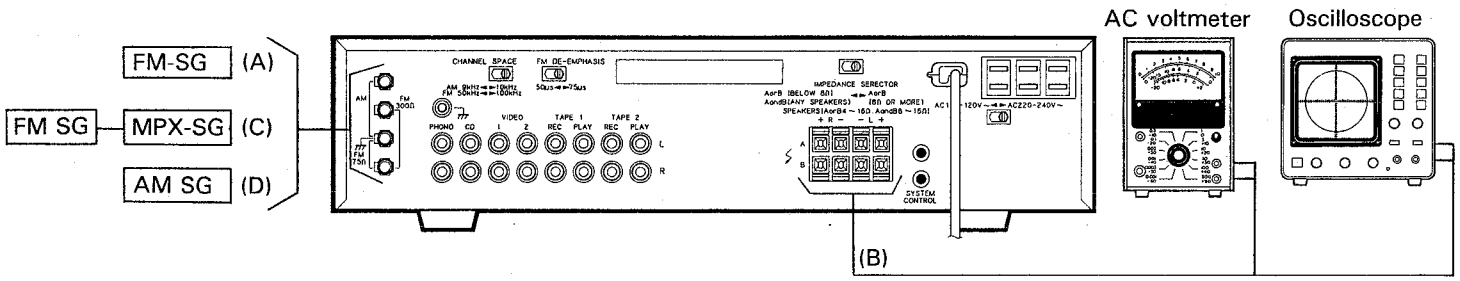
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF			SELECTEUR : FM				
1	DETECTEUR	(A) 98,0MHz 1kHz,±75kHz dév 60dBμ(Entrée ANT)	Relier un voltmètre CC entre les TP5 et TP6.	AUTO ou MONO 98,0MHz	L5 (X05-)	0V	(a)
2	OSCILLATEUR CONTROLE PAR LA TENSION	(A) 98,0MHz 0 dév 100dBμ(Entrée ANT)	Relier un compteur de fréquence entre les TP8 et GND.	AUTO 98,0MHz	VR3 (X05-)	76,00kHz	(b)
3	SEPARATION (E type)	(C) 98,0MHz Signal stéréo 60dBμ(Entrée ANT)	(B)	AUTO 98,0MHz	VR4 (X05-)	Diaphonie minimale.	
4	NIVEAU D'ACCORDER	(A) 98,0MHz 0 dév 18dBμ(Entrée ANT) 300Ω 14dBμ(Entrée ANT) 75Ω	–	AUTO ou MONO 98,0MHz	VR2 (X05-)	Ajuster VR2 et arrêter le mouvement de VR2 au moment où le FL1(TUNED)s'allume.	
SECTION MA			Laisser l'antenne bouche MA installée. SELECTEUR: AM				
(1)	BORD DE BANDE (Bas)	–	Relier un voltmètre entre les TP3(GND) et TP2.	–	L2 (X05-)	1,5V	(c)
(2)	BORD DE BANDE (Haut)	–	Relier un voltmètre entre les TP3(GND) et TP2.	–	TC2 (X05-)	8,0V	(c)
Répéter les points (1) et (2) plusieurs fois.							
(3)	ALIGNEMENT H.T. (1)	(D) 600kHz 20dBμ(Entrée ANT)	(B)	–	L1 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	ALIGNEMENT H.T. (2)	(D) 1400kHz 20dBμ(Entrée ANT)	(B)	–	TC1 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
Répéter les points (3) et (4) plusieurs fois.							
(5)	TRANSFORMATEUR F.I.	(D) 1000kHz 20dBμ(Entrée ANT)	(B)	–	L6 (X05-)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(6)	NIVEAU D'ACCORDER	(A) 1000kHz 36dBμ(Entrée ANT)	–	–	VR1 (X05-)	Ajuster VR1 et arrêter le mouvement de VR1 au moment où le FL1(TUNED)s'allume.	
SECTION AUDIO							
[1]	COURANA DE POLARISATION	–	(E) Connecter un voltmètre CC sur CP1(L) CP2(R)	Volume: 0	VR1(G) VR2(D) (X07-)	13mV	(d)

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG			WÄHLER: FM				
1	DETEKTOR	(A) 98,0MHz 1kHz.±75kHz Hub 60dBμ(ANT-Eingang)	Einen Gleichspannungs-messer zwischen TP5 und TP6 anschließen.	AUTO oder MONO 98,0MHz	L5 (X05-)	0V	(a)
2	SPANNUNGS-GEREGELTER OSZILLATOR	(A) 98,0MHz 0 Hub 100dBμ(ANT-Eingang)	Einen Frequenzzähler zwischen TP8 und GND anschließen.	AUTO 98,0MHz	VR3 (X05-)	76,00kHz	(b)
3	STEREO KANAL TRENNUNG (E Type)	(C) 98,0MHz Stereo Signal 60dBμ(ANT-Eingang)	(B)	AUTO 98,0MHz	VR4 (X05-)	Minimal Klirrfaktor.	
4	ABSTIMM PEGEL	(A) 98,0MHz 0 Hub 18dBμ(ANT-Eingang) 300Ω 14dBμ(ANT-Eingang) 75Ω	–	AUTO oder MONO 98,0MHz	VR2 (X05-)	Den Pegel wiederstand aufdrehen, und dem VR2 Halt geben wobei den FL1(TUNED) anzeiger leuchtet wird.	
MW-EMPFANGSABTEILUNG			Die MW-Rahmenantenne angebracht lassen.		WÄHLER: AM		
(1)	BANDKANTE (Niedrig)	–	Einen Gleichspannungs-messer zwischen TP3(GND) und TP2 anschließen.	–	L2 (X05-)	1,5V	(c)
(2)	BANDKANTE (Hoch)	–	Einen Gleichspannungs-messer zwischen TP3(GND) und TP2 anschließen.	–	TC2 (X05-)	8,0V	(c)
Abstimmungen (1) und (2) mehrere Male wiederholen.							
(3)	HF-ABGLEICH (1)	(D) 600kHz 20dBμ(ANT-Eingang)	(B)	–	L1 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	HF-ABGLEICH (2)	(D) 1400kHz 20dBμ(ANT-Eingang)	(B)	–	TC1 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							
(5)	ZF-ÜBERTRAGER	(D) 1000kHz 20dBμ(ANT-Eingang)	(B)	–	L6 (X05-)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(6)	ABSTIMM PEGEL	(A) 1000kHz 36dBμ(ANT-Eingang)	–	–	VR1 (X05-)	Den Pegel wiederstand aufdrehen, und dem VR1 Halt geben wobei den FL1(TUNED) anzeiger leuchtet wird.	
AUDIO-ABTEILUNG							
[1]	LEERLAUFSTROM	–	(E) Einen Gleichspannungs-messer über CP1(L) CP2(R) anschließen.	Volume: 0	VR1(L) VR2(R) (X07-)	13mV	(d)

KR-A56R

ADJUSTMENT/REGLAGES/ABGLEICH



VOLTAGE TABLES

X05-33XX-XX

IC1

1~3,15	2.4V
4,8,17~19	0V
5~7	13.6V
9,20,21	4.0V
10	3.2V
11	1.8V
12	1.5V
13,14	2.0V
16	1.4V
22	2.8V

IC2

1	−2.5V	8	3.6V
2	0V	9	0V
3	0V	10	0.2V
4	5.2V	11	2.5V
5	2.1V	12	5.0V
6	2.4V	13	3.6V
7	1.1V	14	0V

IC3

1	12.0V
2,10,12~14	2.6V
3	6.2V
4,5	9.8V
6	5.0V
7	5.1V
8	0V
9	0.7V
11	2.5V
15	3.3V
16	0.3V

Q1

E	2.3V
C	10.6V
B	3.6V

Q2

E	2.6V
C	13.8V
B	3.2V

Q3

E	0V
C	4.6V
B	0.6V

Q4

E	0.6V
C	4.6V
B	1.0V

Q5

E	13.9V
C	13.8V
B	13.2V

Q6

E	0V
C	0V
B	0.6V

Q7

E	0V
C	13.9V
B	0V

Q8

E	14.0V
C	0V
B	13.9V

Q11

E	6.2V
C	0V
B	5.4V

Q12

E	2.0V
C	6.3V
B	2.5V

Q13

E	1.3V
C	6.3V
B	2.0V

Q14

E	−30.9V
C	−46.6V
B	−31.4V

Q15

E	5.6V
C	11.6V
B	6.2V

X07-236X-XX

Q1,3

E	0.7V
C	−42V
B	0.1V

Q5

E	—
C	22V
B	−42V

Q7

E	—
C	−1.1V
B	−42

Q9

E	42.3V
C	1.2V
B	41.7V

Q11

E	0.6V
C	54V
B	1.2V

Q12

E	—
C	54V
B	—

Q13

E	−0.6V
C	−54V
B	−1.1V

Q14

E	—
C	—
B	−54V

Q15

E	0V
C	0V
B	0.2V

Q17

E	14.3V
C	−4.4V
B	14.2V

Q18

E	—
C	14V
B	0V

Q19

E	13.2V
C	14.3V
B	13.8V

X09-239X-XX

IC1

1,2	5V	41	−28V
3~11	0V	42	−19V
12~15	5V	43	−29V
16	0V	44	−24V
17	5V	45	0V
18~28	0V	46	−29V
29	5V	47	−24V
30~32	0V	48	−20V
33	−7.5V	49~54	−25V
34	−9.4V	55	−20V
35	−1V	56	−24V
36	−10V	57	−30V
37	−19V	58	0V
38	−14V	59	1V
39	−15V	60	1.5V
40	−19V	61~64	5V

IC2~4

4	−14V
8	14V

IC5

1	0V
11,14	−14V
19	14V

IC6,7,8

7	−14V
14	14V

IC9

2	0V
4,8	−14V
13	14V
15	0V

Q1

E	−14V
C	14V
B	—

Q2

E	14V
C	−14V
B	—

Q6

E	14V
C	−14V
B	—

Q7

E	−14V
C	14V
B	—

Q8

E	—
C	—
B	14V

Q9

E	—
C	20V
B	—

Q10

E	14V
C	20V
B	—

Q11

E	−14V
C	—
B	—

Q12

E	3.3V
C	−14V
B	—

Q15,18

E	—
C	54V
B	—

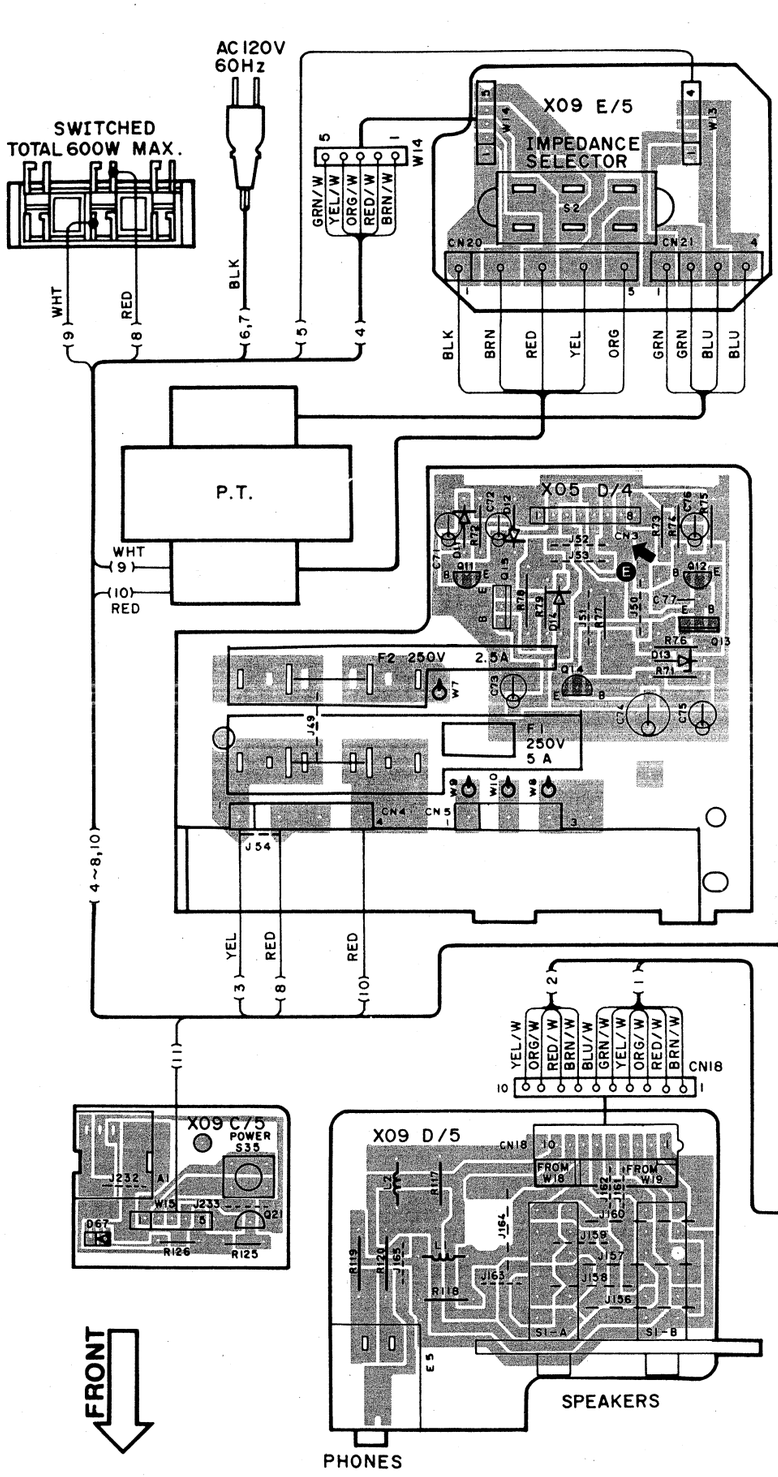
Q16,17

E	—
C	−54V
B	—

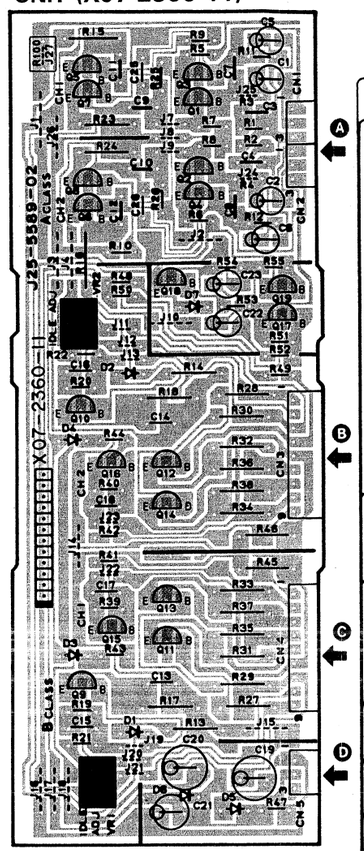
Q32,33

E	—
C	−14V
B	—

P.C. BOARD (Component side view)



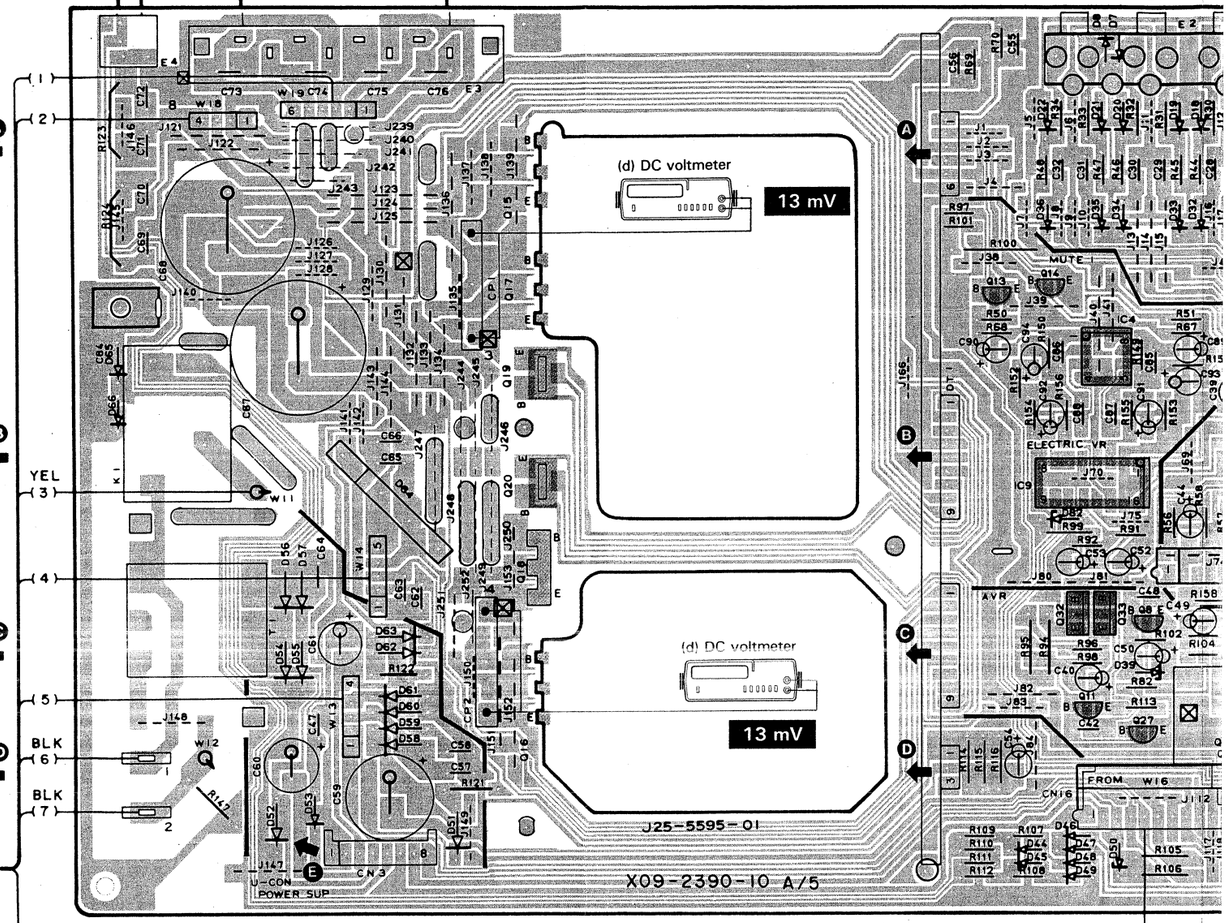
POWER AMPLIFIER
UNIT (X07-2360-11)

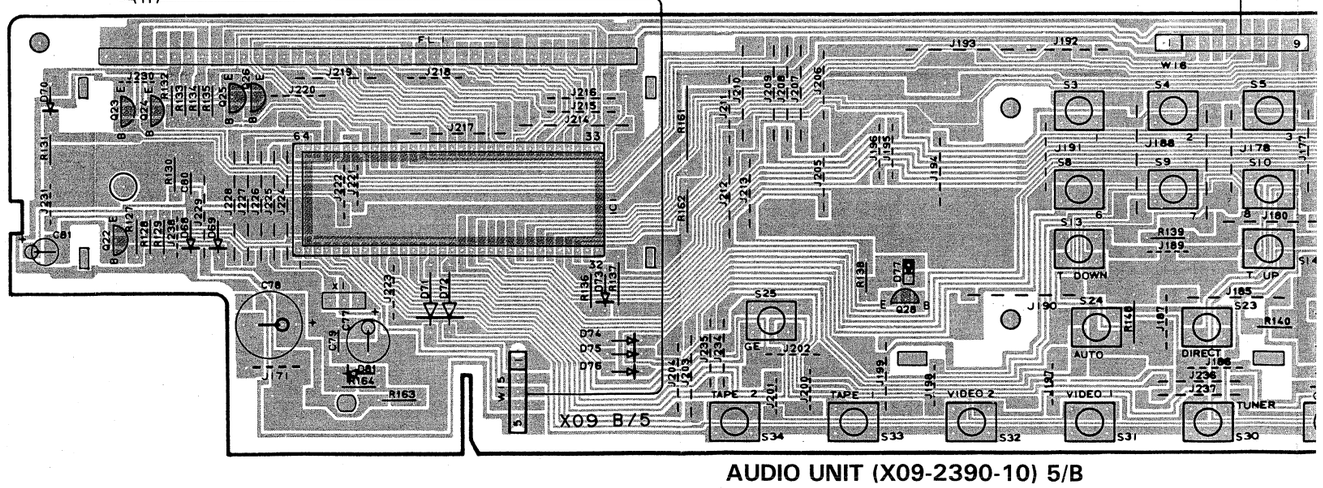


SYSTEM CONTROL

SPEAKERS (A, B: 4Ω~16Ω, A+B: 8Ω~16Ω)
+ Lch − − Rch +

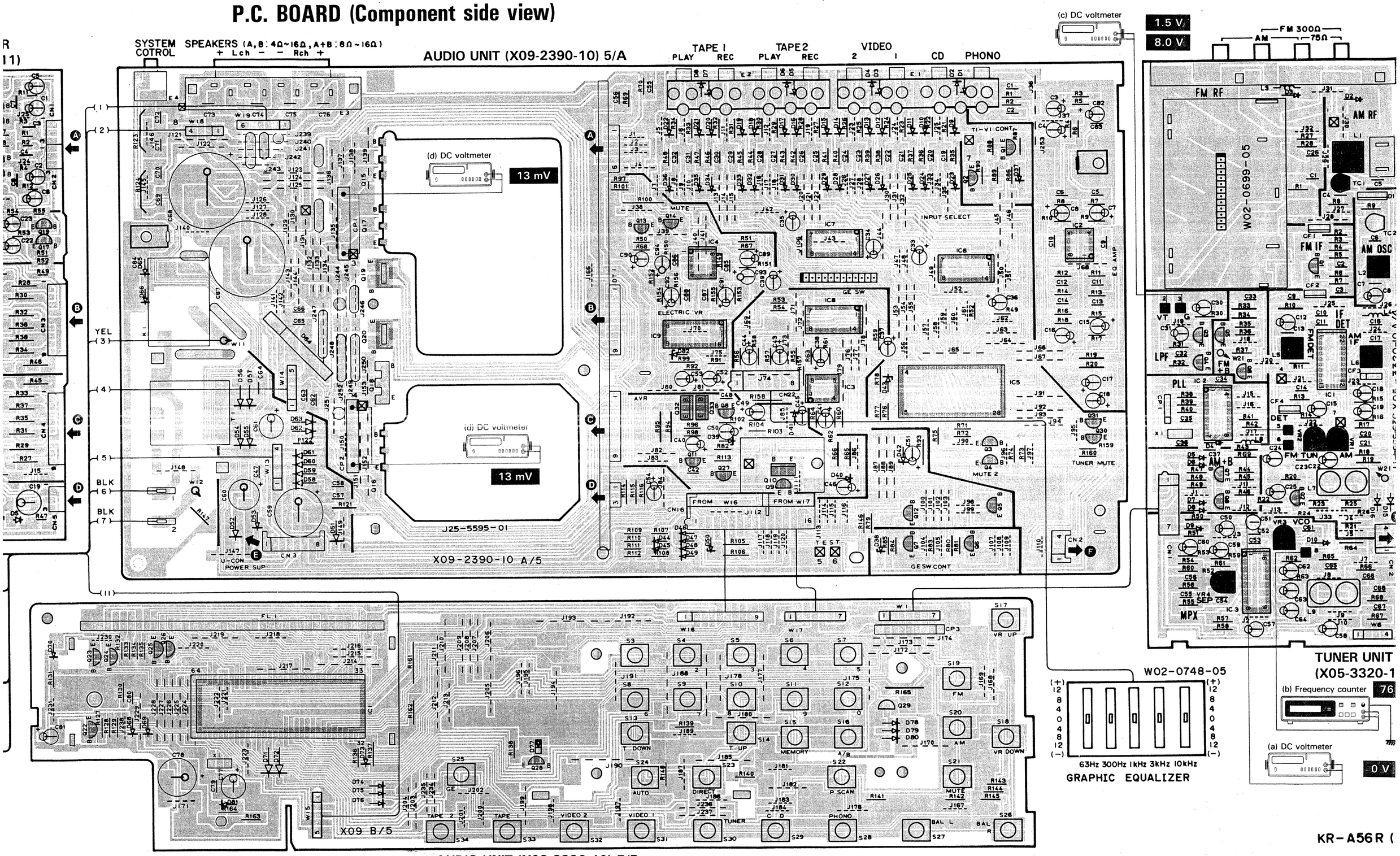
AUDIO UNIT (X09-2390-10) 5/A





AUDIO UNIT (X09-2390-10) 5/B

P.C. BOARD (Component side view)

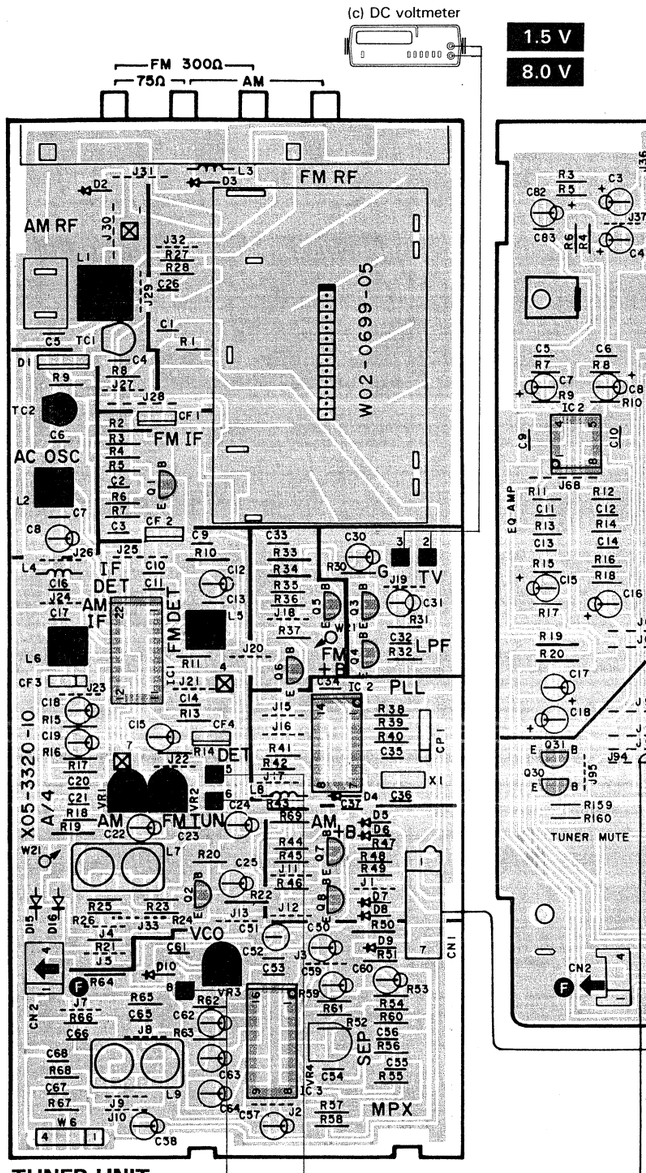


KR-A56R (

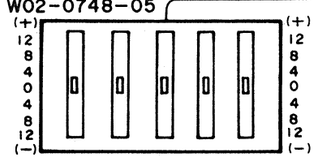
Refer to the schermatic diagram for the values of resistors and capacitors.

P.C. BOARD (Foil side view)

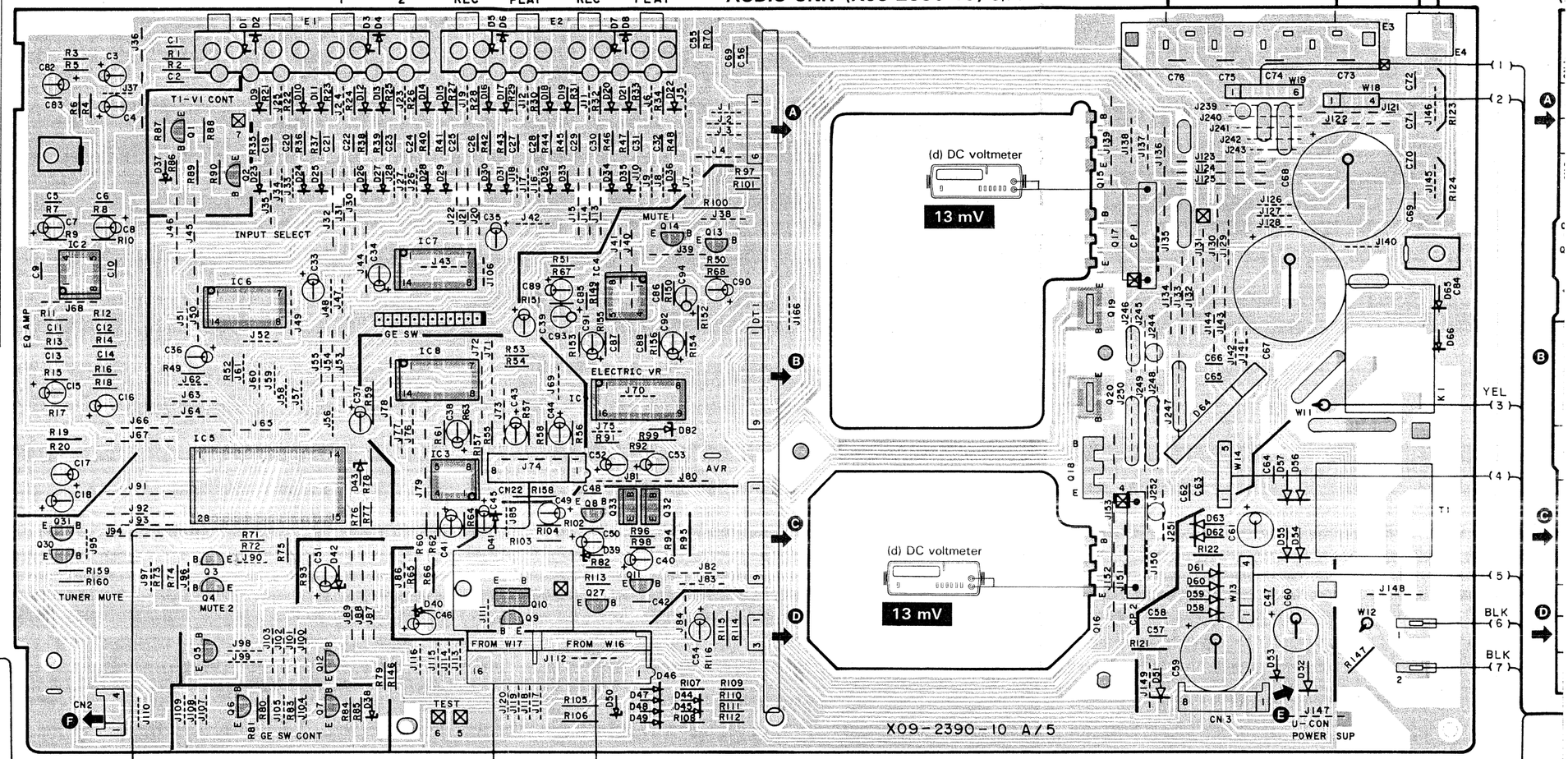
TUNER UNIT (X05-3320-10)



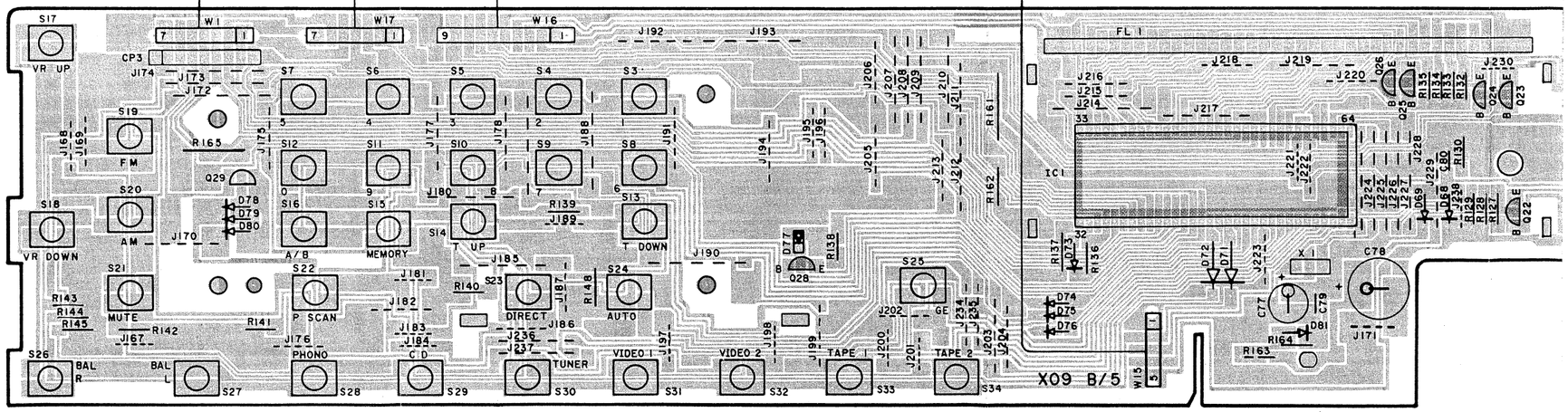
W02-0748-05 GRAPHIC EQUALIZER



AUDIO UNIT (X09-2390-10) 5/A



AUDIO UNIT (X09-2390-10) 5/B



P.C. BOARD (Foil side view)

AUDIO UNIT (X09-2390-10) 5/A

TAPE 2 REC PLAY TAPE 1 REC PLAY

SPEAKERS (A,B : 4Ω~16Ω , A+B : 8Ω~16Ω) + Rch − − Lch +

SYSTEM CONTROL

(d) DC voltmeter 13 mV

(d) DC voltmeter 13 mV

X09-2390-10 A/5

X09-2390-10 B/5

AUDIO UNIT (X09-2390-10) 5/B

POWER AMPLIFIER UNIT (X07-2360-11)

X07-2360-11

AC 120V 60Hz

SWITCHED TOTAL 600W MAX

X09 E/5 IMPEDANCE SELECTOR

P. T.

X05 D/4

F2 250V 2.5V

F1 250V 5A

X09 D/5

X09 C/5 POWER

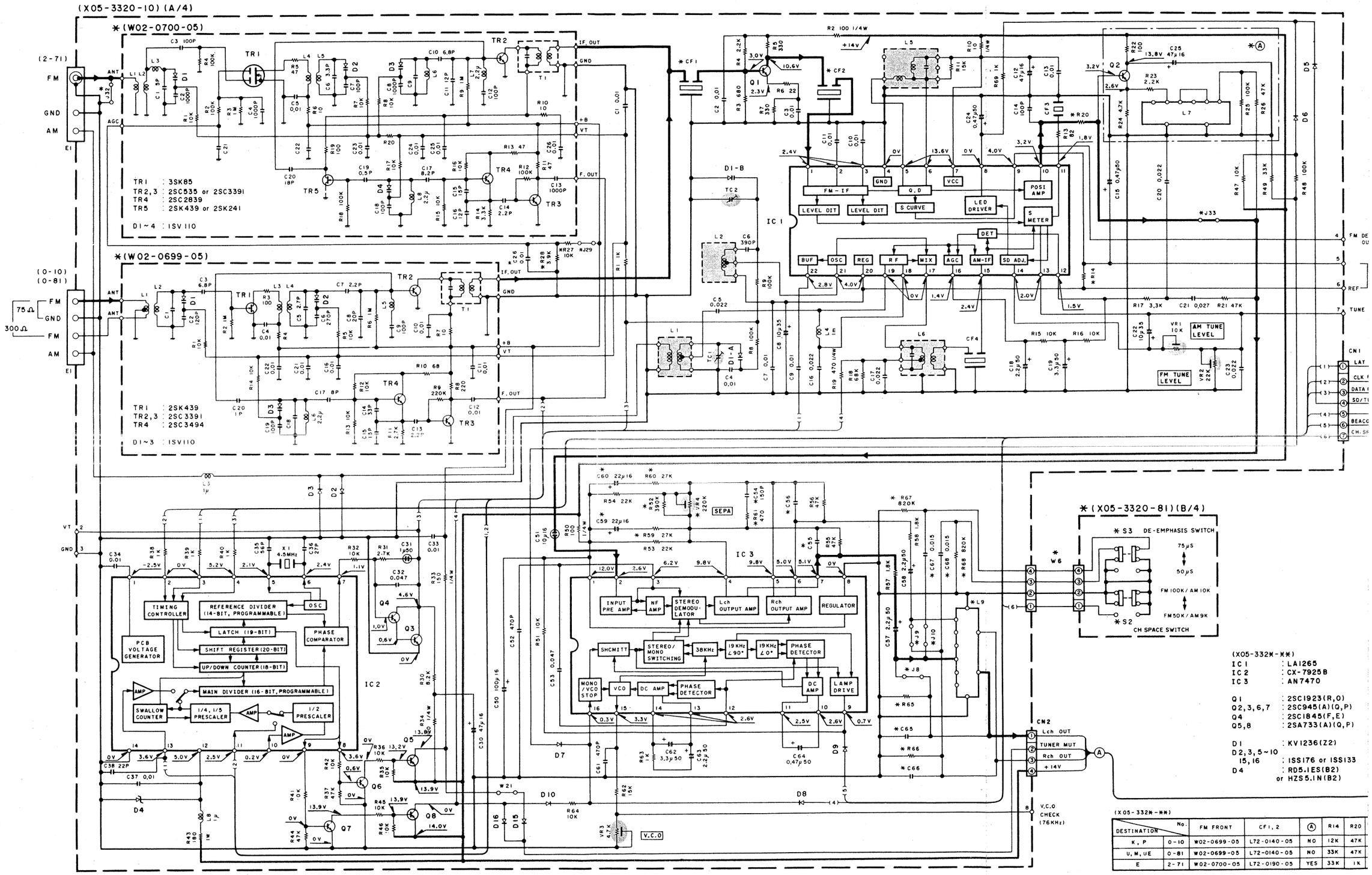
SPEAKERS

PHONES

FRONT

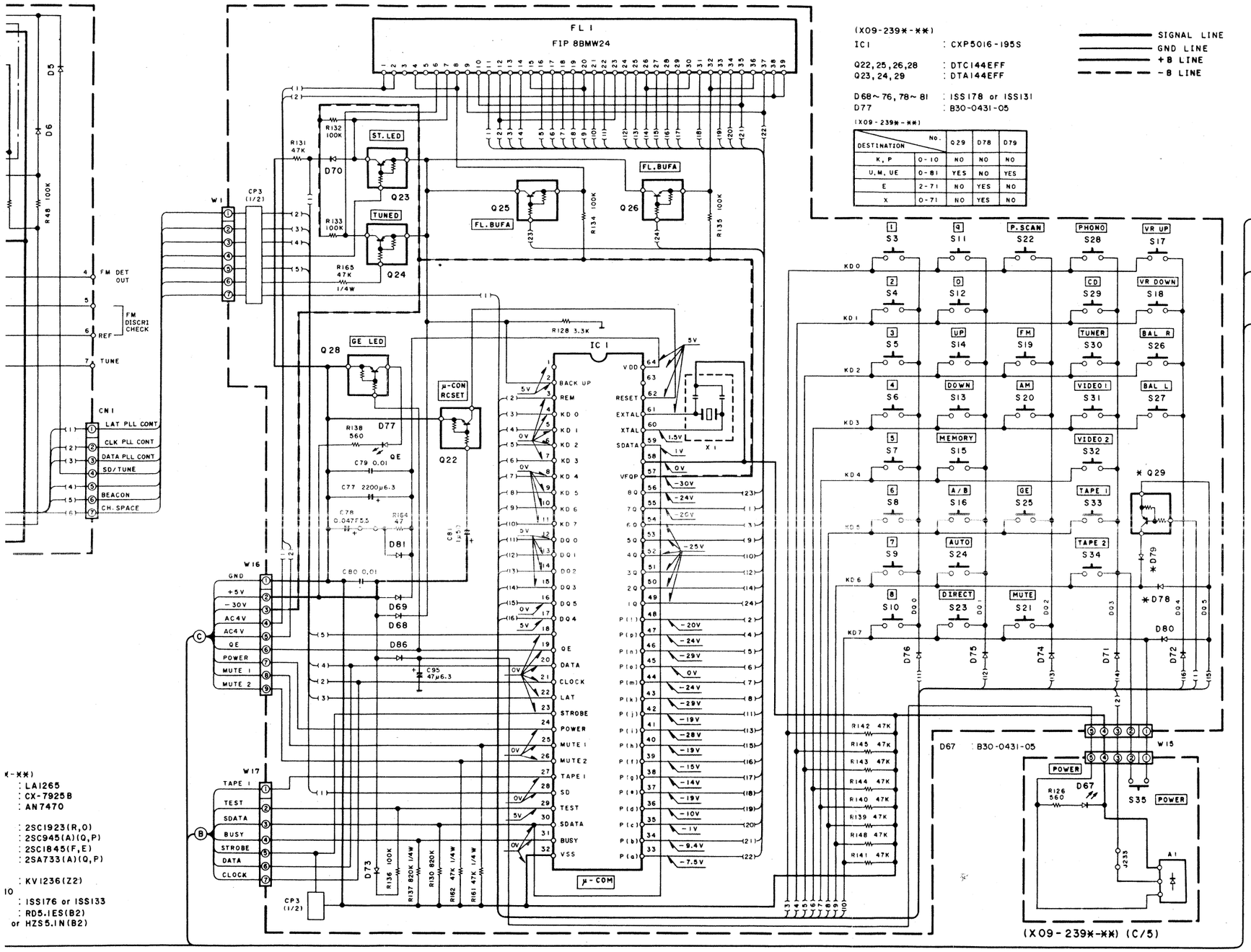
KR-A56R (K)

Refer to the schermatic diagram for the values of resistors and capacitors.



(X05-332*-**) DESTINATION	No.	FM FRONT	CF1, 2	Ⓐ	R14	R20
K, P	0-10	W02-0699-05	L72-0140-05	NO	12K	47K
U, M, UE	0-81	W02-0699-05	L72-0140-05	NO	33K	47K
E	2-71	W02-0700-05	L72-0190-05	YES	33K	1K

(X09-239*-**)(B/5)



(X09-239*-**)
IC1 : CXP5016-195S
Q22,25,26,28 : DTC144EFF
Q23,24,29 : DTA144EFF
D68~76, 78~81 : ISS178 or ISS131
D77 : B30-0431-05

(X09-239*-**)

DESTINATION	No.	Q29	D78	D79
K, P	0-10	NO	NO	NO
U, M, UE	0-81	YES	NO	YES
E	2-71	NO	YES	NO
X	0-71	NO	YES	NO

SIGNAL LINE
GND LINE
+B LINE
-B LINE

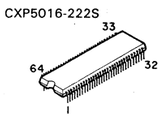
(X09-239*-**)
: LA1265
: CX-7925B
: AN7470

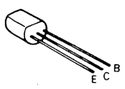
: 2SC1923(R,O)
: 2SC945(A)(Q,P)
: 2SC1845(F,E)
: 2SA733(A)(Q,P)

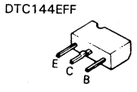
: KV1236(Z2)

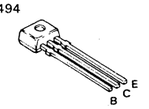
: ISS176 or ISS133
: RD5.1ES(B2)
or HZS5.1N(B2)

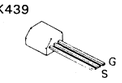
, 2	Ⓐ	R14	R20	R27	R28	R52	R59, 60	R61	R65, 66	R67, 68	C26	C54	C55, 56	C59, 60	C65, 66	C67, 68	VR4	S2,3	L9	J8	J9	J10	J29	J32	J33	W6
40-05	NO	12K	47K	NO	NO	YES	NO	NO	220K	NO	NO	NO	150P	NO	0.043	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	NO
40-05	NO	33K	47K	NO	NO	YES	NO	NO	220K	YES	NO	NO	150P	NO	0.027	YES	NO	YES	NO	YES	YES	YES	NO	NO	YES	YES
90-05	YES	33K	1K	YES	YES	NO	YES	YES	3.9K	NO	YES	YES	1200P	YES	6800P	NO	YES	NO	YES	NO	NO	NO	YES	YES	NO	NO

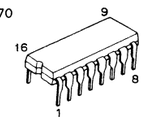


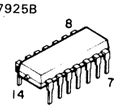


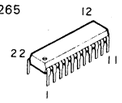












DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanden die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

KR-A56R(K)(1/2)

KR-A5

KENWO

(X07-236*-**)
Q1~4,17 : 2SA992(F,E)
Q5~8,15,16 : 2SC1845(F,E)
Q9,10 : 2SC992(F,E)
Q11,12 : 2SC2590
Q13,14 : 2SA1110
Q18,19 : 2SC945(A)(Q,P)

D1,2,7 : 1SS176 or 1SS133
D3~6 : 1SS178 or 1SS131

(X07-236*-**)

DESTINATION \ No.	R3,4	C7,8
K,P,U,M,UE	0-11	J	NO
E	2-72	1K	YES

(W02-0748-05)

(X09-239*-**)(A/5)

(X09-23
IC2~4
IC5
IC6~8
IC9

(X09-239*-**)

DESTINATION \ No.	C9,10	C60	C69,72	C70,71	C73~76	R3,4	R7,8	R94,95	J145,146
K,P	0-10	220P	330µ25	0.1	NO	NO	NO	1K	150 1W	YES
U,M,UE	0-81	220P	1000µ35	0.1	NO	NO	NO	1K	47 1W	YES
E	2-71	1500P	330µ25	0.22	YES	YES	YES	100	150 1W	NO
X	0-71	220P	330µ25	0.1	NO	NO	NO	1K	150 1W	YES

(X05-332*-**)

DESTINATION \ No.	F2	013,15	R74	R76	R78	J48	J54	S1	W7~10	CN5
K	0-10	NO	2SC2003	1.2K	39 1/4W	100 1W	NO	J	NO	NO	NO
U,M,UE	0-81	YES	2SD1266	7.5K 1/4W	15 1/4W	10 1W	J	J	YES	YES	YES
E	2-71	NO	2SC2003	1.2K	39 1/4W	100 1W	NO	NO	NO	NO	NO

CXD1120P-1

M5218P-A

NJM4558D-A

2SA733(A)
2SA992
2SC1845
2SC2003
2SC2878
2SC945(A)

2SA1110
2SB772
2SC2590

2SD1266

2SA1490
2SC3854

2SC3419

LC4966

CX7977

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. mètre à haute i valeurs peuvent d tions inhérentes a mesure individuel

(X09-239*-**)
IC2~4 : M5218P-A or NJM4558-A
IC5 : CX7977
IC6~8 : LC4966
IC9 : CXD1120P

Q1,7~9
Q2,5,6,11,12,27,34 : 2SA733(A)(Q,P)
Q3,4,13,14,30,31 : 2SC2878
Q10,32,33 : 2SD1266
Q15,16 : 2SC3854
Q17,18 : 2SA1490
Q19,20 : 2SC3419

D1~36,44~49,65,66 : ISS176 or ISS133
D37,38 : RD16ES(B2) or HZS16N(B2)
D39 : RD13ES(B2) or HZS13N(B2)
D40,41 : RD8.2ES(B2) or HZS8.2N(B2)
D42 : RD3.3ES(B2) or HZS3.3N(B2)

D50 : RD6.2ES(B2) or HZS6.2N(B2)
D51,52,54~63 : DSM1A1
D53 : ISS178 or ISS131
D64 : RBV-602LFA
D82 : RD5.1ES(B2) or HZS5.1N(B2)
D83~86 : ISS176

(X05-332*-**)
Q11 : 2SA733(A)(Q,P)
Q12 : 2SC945(A)(Q,P)
Q13,15 : 2SD1266(Q,P) or 2SC2003(L,K)
Q14 : 2SB772(Q,P)

D11,14 : ISS176 or ISS133
D12 : RD6.8ES(B2) or HZS6.8N(B2)
D13 : RD30ES(B) or HZS30N(B)
D17,18 : ISS176 or ISS133

(X05-332*-**)(D/4)
*(X05-3320-81)(C/4)
(X09-239*-**)(D/5)
(X09-2390-10)(E/5)
(K,P) AC120V 60Hz
(U,M,UE) AC110-120V/220-240V 50/60Hz
(X) AC240V 50Hz
(E) AC220V 50Hz
(U,M,UE)TYPE
(X,E)TYPE
(K,P)TYPE
SIGNAL LINE
GND LINE
+B LINE
-B LINE
SPEAKERS

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

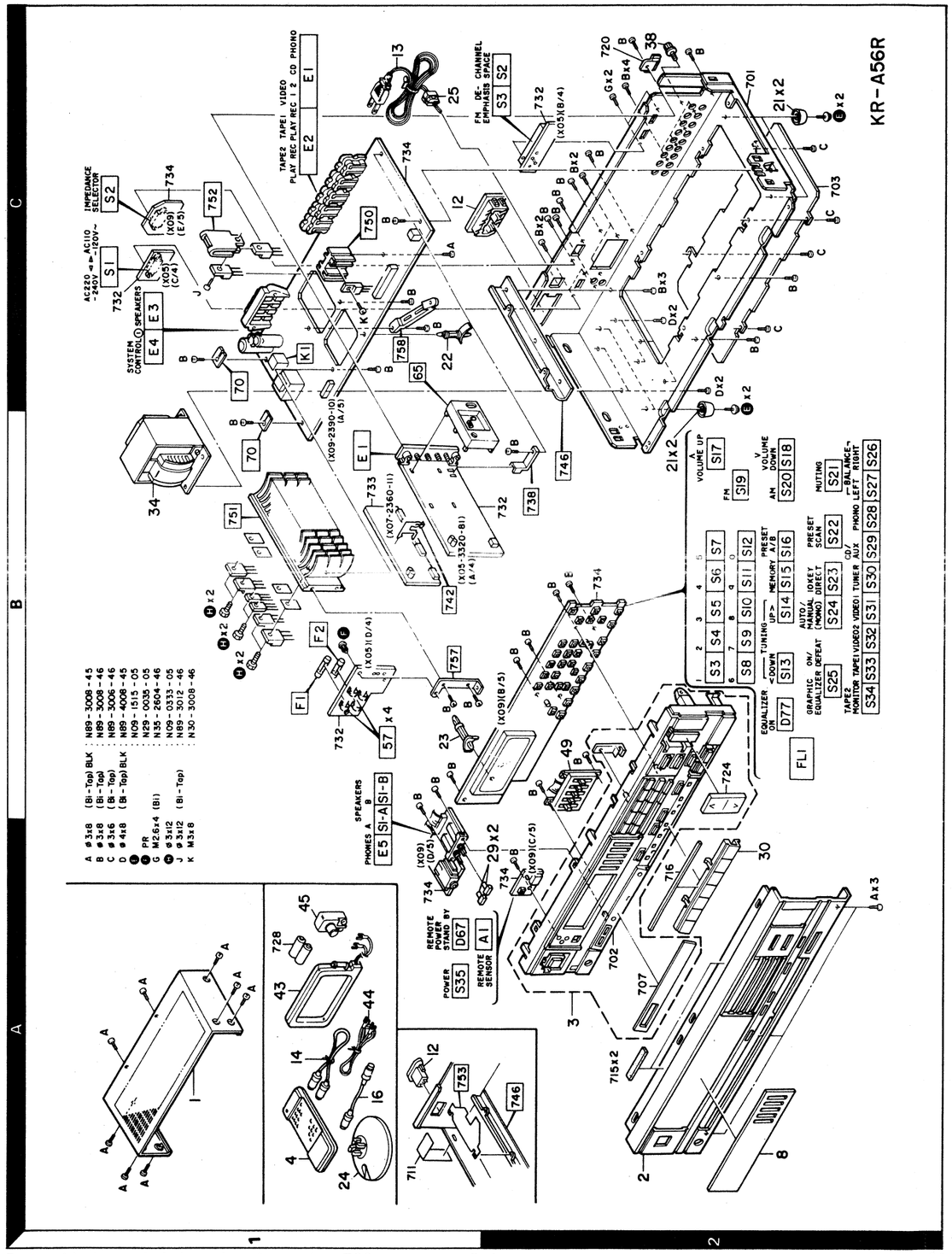
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanden die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

KR-A56R(K) (2/2)

KR-A56R
KENWOOD

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

✳ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
			KR-A56R			
1	1A	✳	A01-1544-01	METALLIC CABINET		
2	2A	✳	A20-5186-02	PANEL		
3	2A	✳	A22-0683-02	SUB PANEL ASSY		
4	1A		A70-0166-05	REMOTE CONTROLLER ASSY		
8	2A	✳	B03-2263-03	DRESSING PLATE		
–			B46-0092-03	WARRANTY CARD	K	
–			B46-0094-03	WARRANTY CARD	UUE	
–			B46-0095-03	WARRANTY CARD	UUE	
–			B46-0096-13	WARRANTY CARD	X	
–			B46-0121-03	WARRANTY CARD	P	
–			B46-0122-13	WARRANTY CARD	E	
–		✳	B50-6854-00	INSTRUCTION MANUAL(ENGLISH)	KUUE	
–		✳	B50-6855-00	INSTRUCTION MANUAL(ENG,FRE)	PMX	
–		✳	B50-6856-00	INSTRUCTION MANUAL(E,F,SP,A)	M	
–		✳	B50-6857-00	INSTRUCTION MANUAL(F,G,D)	E	
–			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
–			B58-0269-04	CAUTION CARD	K	
–			B58-0389-04	CAUTION CARD		
–			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
–			B58-0803-03	CAUTION CARD	E	
–			B59-0092-00	SERVICE DIRECTORY	UUE	
⚠ 12	1C		E03-0055-05	AC OUTLET	F	
⚠ 12	1C		E03-0086-05	AC OUTLET	KPUMUE	
⚠ 13	1C		E30-0459-05	AC POWER CORD	E	
⚠ 13	1C		E30-0812-05	AC POWER CORD	UMUE	
⚠ 13	1C		E30-1341-05	AC POWER CORD	X	
⚠ 13	1C	✳	E30-2209-05	AC POWER CORD	KP	
14	1A		E30-0977-05	CORD WITH PLUG (L=1500)	E	
16	1C		E30-1392-05	CORD WITH PLUG (L=660)	E	
–		✳	H01-7453-04	ITEM CARTON CASE		
–		✳	H10-3400-02	POLYSTYRENE FOAMED FIXTURE		
–			H12-1161-04	PACKING FIXTURE(REMOTE CONTROL		
–			H25-0181-04	PROTECTION BAG (150X260X0.05)		
–			H25-0223-04	PROTECTION BAG (750X350X0.03)		
–			H25-0232-04	PROTECTION BAG (235X350X0.03)		
21	2B,2C		J02-0170-04	FOOT		
22	1C		J19-0506-05	UNIT HOLDER (H=8.3)		
23	1B	✳	J19-0516-05	UNIT HOLDER (H=21.0)		
24	1A	✳	J19-2815-04	ANTENNA HOLDER		
⚠ 25	1C		J42-0083-05	POWER CORD BUSHING		
–			J61-0307-05	WIRE BAND		
29	2A		K27-1304-04	KNOB (BUTTON) SPEAKERS		
30	2A	✳	K29-2657-03	KNOB (SELECTOR)		
⚠ 34	1B	✳	L01-7641-05	POWER TRANSFORMER	K	
⚠ 34	1B	✳	L01-7642-05	POWER TRANSFORMER	E	
⚠ 34	1B	✳	L01-7645-05	POWER TRANSFORMER	UMUE	
⚠ 34	1B	✳	L01-7647-05	POWER TRANSFORMER	P	
⚠ 34	1B	✳	L01-7648-05	POWER TRANSFORMER	X	
38	2C		N08-0128-35	BINDING POST (GND)		
E	2C		N09-1515-05	TAPPING SCREW (Ø3X8)FOOT		

E: Scandinavia & Europe **K**: USA **P**: Canada
U: PX(Far East, Hawaii) **T**: England **M**: Other Areas
UE: AAFES(Europe) **X**: Australia

⚠ indicates safety critical components.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Telle ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
F	1B		N29-0035-05	PUSH RIVET (3.5X5.5)		
43	1A		T90-0104-25	LOOP ANTENNA		
44	1A		T90-0121-05	T TYPE ANTENNA		
45	1A		T90-0136-05	ANTENNA ADAPTOR	XE	
49	2B	*	W02-0748-05	ELECTRIC CIRCUIT MODULE		
TUNER UNIT (X05-3320-10)						
C1 -4			CK45FF1H103Z	CERAMIC 0.010UF Z		
C5			CK45FF1H223Z	CERAMIC 0.022UF Z		
C6			CQ09FS1H391J	POLYSTY 390PF J		
C7			CK45FF1H103Z	CERAMIC 0.010UF Z		
C8			CE04JW1V100M	ELECTRO 10UF 35WV		
C9 -11			CK45FF1H103Z	CERAMIC 0.010UF Z		
C12			CE04LW1C470M	ELECTRO 47UF 16WV		
C13			CK45FF1H103Z	CERAMIC 0.010UF Z		
C14			CC45FSL1H101J	CERAMIC 100PF J		
C15			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C16 ,17			CK45FF1H223Z	CERAMIC 0.022UF Z		
C18			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C19			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C20			CK45FF1H223Z	CERAMIC 0.022UF Z		
C21			CF92FV1H273J	MF 0.027UF J		
C22			CE04LW1V100M	ELECTRO 10UF 35WV		
C23			CK45FF1H223Z	CERAMIC 0.022UF Z		
C24			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C25			CE04LW1C470M	ELECTRO 47UF 16WV	XE	
C26			CK45FF1H103Z	CERAMIC 0.010UF Z	XE	
C30			CE04LW1C470M	ELECTRO 47UF 16WV		
C31			C90-1349-05	NP-ELEC 1UF 50WV		
C32			CF92FV1H473J	MF 0.047UF J		
C33 ,34			CK45FF1H103Z	CERAMIC 0.010UF Z		
C35		*	CC45FCH1H560J	CERAMIC 56PF J		
C36		*	CC45FCH1H270J	CERAMIC 27PF J		
C37			CK45FF1H103Z	CERAMIC 0.010UF Z		
C38			CC45FSL1H220J	CERAMIC 22PF J		
C50		*	CE04LW1C101M	ELECTRO 100UF 16WV		
C51			C90-1332-05	NP-ELEC 10UF 16WV		
C52			CK45FB1H471K	CERAMIC 470PF K		
C53			CF92FV1H473J	MF 0.047UF J		
C54			CC45FSL1H151J	CERAMIC 150PF J	XE	
C55 ,56			CC45FSL1H151J	CERAMIC 150PF J	KPUMUE	
C55 ,56			CF92FV1H122J	MF 1200PF J	XE	
C57 ,58			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C59 ,60		*	CE04LW1C220M	ELECTRO 22UF 16WV	XE	
C61			CQ09FS1H471J	POLYSTY 470PF J		
C62			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C63			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C64			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C65 ,66			CF92FV1H273J	MF 0.027UF J	UMUE	
C65 ,66			CF92FV1H433J	MF 0.043UF J	KP	
C65 ,66		*	CF92FV1H682J	MF 6800PF J	XE	
C67 ,68			CF92FV1H153J	MF 0.015UF J	UMUE	
C71			CE04LW1V100M	ELECTRO 10UF 35WV		
C72 ,73			CE04LW1H010M	ELECTRO 1.0UF 50WV		

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C74		*	CE04LW1V471M	ELECTRO 470UF 35WV		
C75		*	CE04LW1H100M	ELECTRO 10UF 50WV		
C76			CE04LW1C470M	ELECTRO 47UF 16WV		
C77			CF92FV1H104J	MF 0.10UF J		
TC1 ,2			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		
E1	1B		E20-0318-05	SCREW TERMINAL BOARD(2P)FM/AM	XE	
E1	1B		E20-0452-05	SCREW TERMINAL BOARD(4P)FM/AM	KPUMUE	
⚠ F1	1B		F05-2525-05	FUSE (SEMKO) (250V T2.5A)	XE	
⚠ F1	1B		F06-5022-05	FUSE (UL) (250V 5A)	KP	
⚠ F1 ,2	1B		F05-2521-05	FUSE (250V 2.5A)	UMUE	
57	1B		J13-0041-05	FUSE CLIP	KPUMUE	
61	1B		J13-0054-05	FUSE CLIP	XE	
CF1 ,2			L72-0140-05	CERAMIC FILTER	KPUMUE	
CF1 ,2			L72-0190-05	CERAMIC FILTER	XE	
CF3			L72-0099-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L1			L31-0509-05	MW-RF COIL		
L2			L32-0277-15	MW OSCILLATING COIL		
L3			L40-1092-14	SMALL FIXED INDUCTOR(1.0UH,M)		
L4			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L5			L30-0439-15	FM IFT		
L6			L30-0362-05	AM IFT		
L7			L79-0125-05	LC FILTER	XE	
L8			L40-1092-14	SMALL FIXED INDUCTOR(1.0UH,M)		
L9		*	L79-0739-05	LC FILTER	XE	
X1			L77-0573-05	CRYSTAL RESONATOR(4.5MHZ)		
R2			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R10			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R19			RD14GB2E471J	FL-PROOF RD 470 J 1/4W		
R22			RD14GB2E101J	FL-PROOF RD 100 J 1/4W	XE	
R33			RD14GB2E151J	FL-PROOF RD 150 J 1/4W		
R34			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R43			RS14KB3A181J	FL-PROOF RS 180 J 1W		
R50			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R76			RD14GB2E150J	FL-PROOF RD 15 J 1/4W	UMUE	
R76			RD14GB2E390J	FL-PROOF RD 39 J 1/4W	KPXE	
R78			RS14KB3A101J	FL-PROOF RS 100 J 1W		
VR1			R12-3096-05	TRIMMING POT.(10K)AM TUNE LVL		
VR2			R12-3097-05	TRIMMING POT.(22K)FM TUNE LVL		
VR3			R12-1069-05	TRIMMING POT.(4.7K)VCO		
VR4			R12-5047-05	TRIMMING POT.(220K)SEPA	XE	
⚠ S1	1C		S31-2083-05	SLIDE SWITCH (POWER TYPE)	UMUE	
S2 ,3	2C		S31-2072-05	SLIDE SWITCH (FM,CH SPACE)	UMUE	
D1			KV1236(Z2)	VARIABLE CAPACITANCE DIODE		
D2 ,3			1SS133	DIODE		
D2 ,3			1SS176	DIODE		
D4			HZS5.1N(B2)	ZENER DIODE		
D4			RD5.1ES(B2)	ZENER DIODE		
D5 -11			1SS133	DIODE		
D5 -11			1SS176	DIODE		
D12			HZS6.8N(B2)	ZENER DIODE		
D12			RD6.8ES(B2)	ZENER DIODE		
D13		*	HZS30N(B)	ZENER DIODE		

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D13		*	RD30ES(B)	ZENER DIODE		
D14 -16			1SS133	DIODE		
D14 -16			1SS176	DIODE		
D17 ,18			1SS176	DIODE		
IC1			LA1265	IC(FM/AM TUNER)		
IC2			CX7925B	IC(FREQUENCY SYNTHESIZER PLL)		
IC3			AN7470	IC(FM MPX)		
Q1			2SC1923(R,Q)	TRANSISTOR		
Q2 ,3			2SC945(A)(Q,P)	TRANSISTOR	XE	
Q3			2SC945(A)(Q,P)	TRANSISTOR	KPUMUE	
Q4			2SC1845(F,E)	TRANSISTOR		
Q5			2SA733(A)(Q,P)	TRANSISTOR		
Q6 ,7			2SC945(A)(Q,P)	TRANSISTOR		
Q8			2SA733(A)(Q,P)	TRANSISTOR		
Q11			2SA733(A)(Q,P)	TRANSISTOR		
Q12			2SC945(A)(Q,P)	TRANSISTOR		
Q13			2SC2003(L,K)	TRANSISTOR	KPXE	
Q13			2SD1266(Q,P)	TRANSISTOR	UMUE	
Q14			2SB772(Q,P)	TRANSISTOR		
Q15			2SC2003(L,K)	TRANSISTOR	KPXE	
Q15			2SD1266(Q,P)	TRANSISTOR	UMUE	
65	1C		W02-0699-05	FM FRONT-END ASSY	KPUMUE	
65	1C		W02-0700-05	FM FRONT-END ASSY	XE	
POWER AMPLIFIER UNIT (X07-2360-11)						
C1 ,2			CE04LW1V100M	ELECTRO 10UF 35WV		
C3 ,4			CC45FSL1H221J	CERAMIC 220PF J		
C5 ,6		*	CE04LW1A470M	ELECTRO 47UF 10WV		
C7 ,8			CC45FSL1H101J	CERAMIC 100PF J	E	
C9 ,10			CC45FSL1H680J	CERAMIC 68PF J		
C11 ,12			CC45FSL1H560J	CERAMIC 56PF J		
C13 ,14			CC45FSL1H221J	CERAMIC 220PF J		
C15 ,16			CK45FF1H103Z	CERAMIC 0.010UF Z		
C17 ,18			CK45FB1H222K	CERAMIC 2200PF K		
C19 ,20		*	CE04LW1J470M	ELECTRO 47UF 63WV		
C21		*	CE04LW1C101M	ELECTRO 100UF 16WV		
C22			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C23			CE04LW1V100M	ELECTRO 10UF 35WV		
C25 ,26			CC45FSL1H070D	CERAMIC 7.0PF D		
R13 ,14			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R17 ,18			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R23 ,24			RD14GB2E271J	FL-PROOF RD 270 J 1/4W		
R31 -34			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R35 -38			RD14GB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R45			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R46			RD14GB2E330J	FL-PROOF RD 33 J 1/4W		
VR1 ,2			R12-1070-05	TRIMMING POT. (1K)IDLE ADJ		
D1 ,2			1SS133	DIODE		
D1 ,2			1SS176	DIODE		
D3 -6			1SS131	DIODE		
D3 -6			1SS178	DIODE		
D7			1SS133	DIODE		
D7			1SS176	DIODE		
Q1 -4			2SA992(F,E)	TRANSISTOR		

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Q5 -8			2SC1845(F,E)	TRANSISTOR				
Q9 ,10			2SA992(F,E)	TRANSISTOR				
Q11 ,12			2SC2590	TRANSISTOR				
Q13 ,14			2SA1110	TRANSISTOR				
Q15 ,16			2SC1845(F,E)	TRANSISTOR				
Q17			2SA992(F,E)	TRANSISTOR				
Q18 ,19			2SC945(A)(Q,P)	TRANSISTOR				
AUDIO UNIT (X09-2390-10)								
D67	1A		B30-0431-05	LED(LN21CPH)	REMOTE	POWER		
D77	2B		B30-0431-05	LED(LN21CPH)	GE			
C1 ,2			CC45FSL1H390J	CERAMIC	39PF	J		
C3 ,4			CE04LW1V100M	ELECTRO	10UF	35WV		
C5 ,6			CC45FSL1H221J	CERAMIC	220PF	J		
C7 ,8		*	CE04LW1A101M	ELECTRO	100UF	10WV		
C9			CC45FSL1H221J	CERAMIC	220PF	J	KPX	
C9			CC45FSL1H221J	CERAMIC	220PF	J	UMUE	
C9			CF92FV1H152J	MF	1500PF	J	E	
C10			CC45SL1H221J	CERAMIC	220PF	J	KPX	
C10			CC45SL1H221J	CERAMIC	220PF	J	UMUE	
C10			CF92V1H152J	MF	1500PF	J	E	
C11 ,12			CF92FV1H123J	MF	0.012UF	J		
C13 ,14			CF92FV1H332J	MF	3300PF	J		
C15		*	CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C16			CE04JW1H4R7M	ELECTRO	4.7UF	50WV		
C17 ,18			CE04LW1C470M	ELECTRO	47UF	16WV		
C19 -32			CC45FSL1H221J	CERAMIC	220PF	J		
C33 -37		*	CE04LW1H100M	ELECTRO	10UF	50WV		
C38			CE04LW1H3R3M	ELECTRO	3.3UF	50WV		
C39		*	CE04LW1H100M	ELECTRO	10UF	50WV		
C40			CE04LW1C470M	ELECTRO	47UF	16WV		
C41			CE04LW1H3R3M	ELECTRO	3.3UF	50WV		
C42			CK45FB1H102K	CERAMIC	1000PF	K		
C43 ,44			CE04LW1H3R3M	ELECTRO	3.3UF	50WV		
C45 ,46			CE04LW1C470M	ELECTRO	47UF	16WV		
C47			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C48			CK45FB1H102K	CERAMIC	1000PF	K		
C49		*	CE04LW1V220M	ELECTRO	22UF	35WV		
C50			CE04LW1C470M	ELECTRO	47UF	16WV		
C51			CE04LW1V100M	ELECTRO	10UF	35WV		
C52 ,53			CE04LW1C470M	ELECTRO	47UF	16WV		
C54			CE04JW1H100M	ELECTRO	10UF	50WV		
C57 ,58			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C59		*	CE04EW1E332M	ELECTRO	3300UF	25WV		
C60		*	CE04EW1E331M	ELECTRO	330UF	25WV	KPXE	
C60			CE04EW1V102M	ELECTRO	1000UF	35WV	UMUE	
C61		*	CE04LW1H101M	ELECTRO	100UF	50WV		
C62 -66			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C67 ,68		*	C90-1504-05	ELECTRO	5600UF	56WV		
C69			CF92FV1H104J	MF	0.10UF	J	KPUMUE	
C69			CF92FV1H104J	MF	0.10UF	J	X	
C69 -72			CF92FV1H224J	MF	0.22UF	J	E	
C72			CF92FV1H104J	MF	0.10UF	J	KPUMUE	
C72			CF92FV1H104J	MF	0.10UF	J	X	
C73 -76			CK45FB1H471K	CERAMIC	470PF	K	E	

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C77			CE04EW0J222M	ELECTRO 2200UF 6.3WV		
C78		*	C91-0937-05	BACKUP 0.047F 5.5WV		
C79 ,80			CK45FF1H103Z	CERAMIC 0.010UF Z		
C81			CE04JW1H010M	ELECTRO 1.0UF 50WV		
C82			CK45FB1H561K	CERAMIC 560PF K		
C83			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C89 ,90			CE04LW1V100M	ELECTRO 10UF 35WV		
C91			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C92			CE04JW1H010M	ELECTRO 1.0UF 50WV		
C93 ,94		*	CE04LW1A470M	ELECTRO 47UF 10WV		
C95			CE04JW0J470M	ELECTRO 47UF 6.3WV		
C96			CE04EW1A470M	ELECTRO 47UF 10WV		
C97			CK45F1H103Z	CERAMIC 0.010UF Z		
C98		*	CE04EW1V4R7M	ELECTRO 4.7UF 35WV		
70	1B,1C		E23-0149-05	TERMINAL		
E1 ,2	1C	*	E13-0819-05	PHONO JACK (TAPE,VIDEO)		
E3	1C		E20-0823-05	LOCK TERMINAL BOARD(8P)SPKRS		
E4	1C		E11-0165-05	MINIATURE PHONE JACK	KPUMUE	
E4	1C		E11-0168-05	MINIATURE PHONE JACK	XE	
E5	1A		E11-0162-05	PHONE JACK (3P)		
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
⚠ T1		*	L01-7651-05	POWER TRANSFORMER	KP	
⚠ T1		*	L01-7652-05	POWER TRANSFORMER	E	
⚠ T1		*	L01-7655-05	POWER TRANSFORMER	UMUE	
⚠ T1		*	L01-7657-05	POWER TRANSFORMER	X	
X1			L78-0218-05	RESONATOR		
H	1B		N09-0333-05	TAPPING SCREW (Ø3X12)		
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
CP3		*	R90-0485-05	MULTI-COMP 47PX9 J		
R65 ,66			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R94 ,95			RS14KB3A151J	FL-PROOF RS 150 J 1W	KPXE	
R94 ,95			RS14KB3A470J	FL-PROOF RS 47 J 1W	UMUE	
R117,118			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R119,120			RS14KB3A561J	FL-PROOF RS 560 J 1W		
R121			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R122			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R123,124			RS14KB3D100J	FL-PROOF RS 10 J 2W		
R147			R92-0173-05	RC 2.2M M 1/2W	KP	
⚠ K1	1C		S51-1036-05	MAGNETIC RELAY		
S1	1A,1B		S42-2155-05	MULTIPLE PUSH SWITCH(SPEAKERS)		
S2	1C		S31-2113-05	SLIDE SWITCH (IMPEDANCE SEL)		
S3 -16	2B		S40-1064-05	PUSH SWITCH (1-0,TUNING SEL		
S17	2B		S40-1064-05	PUSH SWITCH (VOL-UP)		
S18 -35	1A,2B		S40-1064-05	PUSH SWITCH (FM,AM ETC)		
D1 -36			1SS133	DIODE		
D1 -36			1SS176	DIODE		
D37 ,38			HZS16N(B2)	ZENER DIODE		
D37 ,38			RD16ES(B2)	ZENER DIODE		
D39			HZS13N(B2)	ZENER DIODE		
D39			RD13ES(B2)	ZENER DIODE		
D40 ,41			HZS8.2N(B2)	ZENER DIODE		

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D40 ,41			RD8.2ES(B2)	ZENER DIODE		
D42			HZS3.3N(B2)	ZENER DIODE		
D42			RD3.3ES(B2)	ZENER DIODE		
D43			HZS5.1N(B2)	ZENER DIODE		
D43			RD5.1ES(B2)	ZENER DIODE		
D44 -49			1SS133	DIODE		
D44 -49			1SS176	DIODE		
D50			HZS6.2N(B2)	ZENER DIODE		
D50			RD6.2ES(B2)	ZENER DIODE		
D51 ,52			DSM1A1	DIODE		
D53			1SS131	DIODE		
D53			1SS178	DIODE		
D54 -63			DSM1A1	DIODE		
D64			RBV-602LFA	DIODE		
D65 ,66			1SS133	DIODE		
D65 ,66			1SS176	DIODE		
D68 -76			1SS133	DIODE		
D68 -76			1SS176	DIODE		
D78			1SS133	DIODE	XE	
D78			1SS176	DIODE	XE	
D79 -81			1SS133	DIODE	UMUE	
D79 -81			1SS176	DIODE	UMUE	
D80 ,81			1SS133	DIODE	KPXE	
D80 ,81			1SS176	DIODE	KPXE	
D82			HZS5.1N(B2)	ZENER DIODE		
D82			RD5.1ES(B2)	ZENER DIODE		
D83 -86			1SS176	DIODE		
FL1	2B		FIP8BMW24	FLUORESCENT INDICATOR TUBE		
IC1			CXP5016-222S	IC(MICROPROCESSOR)		
IC2 -4			M5218P-A	IC(OP AMP X2)		
IC2 -4		*	NJM4558D-A	IC(OP AMP X2)		
IC5			CX7977	IC(FUNCTION SW FOR AUDIO)		
IC6 -8			LC4966	IC(CMOS LOGIC BILATERAL SW)		
IC9			CXD1120P-1	IC(ELECTRONIC VOLUME)		
Q1			2SC945(A)(Q,P)	TRANSISTOR		
Q2			2SA733(A)(Q,P)	TRANSISTOR		
Q3 ,4			2SC2878	TRANSISTOR		
Q5 ,6			2SA733(A)(Q,P)	TRANSISTOR		
Q7 -9			2SC945(A)(Q,P)	TRANSISTOR		
Q10			2SD1266	TRANSISTOR		
Q11 ,12			2SA733(A)(Q,P)	TRANSISTOR		
Q13 ,14			2SC2878	TRANSISTOR		
Q15 ,16			2SC3854	TRANSISTOR		
Q17 ,18			2SA1490	TRANSISTOR		
Q19 ,20			2SC3419	TRANSISTOR		
Q22			DTC144EFF	DIGITAL TRANSISTOR		
Q23 ,24			DTA144EFF	DIGITAL TRANSISTOR		
Q25 ,26			DTC144EFF	DIGITAL TRANSISTOR		
Q27			2SA733(A)(Q,P)	TRANSISTOR		
Q28			DTC144EFF	DIGITAL TRANSISTOR		
Q29			DTA144EFF	DIGITAL TRANSISTOR	UMUE	
Q30 ,31			2SC2878	TRANSISTOR		
Q32 ,33			2SD1266	TRANSISTOR		
Q34			2SA733(A)(Q,P)	TRANSISTOR		

E: Scandinavia & Europe **K:** USA **P:** Canada
U: PX(Far East, Hawaii) **T:** England **M:** Other Areas
UE: AAFES(Europe) **X:** Australia

⚠ indicates safety critical components.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
A1	2A		W02-0692-05	ELECTRIC CIRCUIT MODULE		
FM FRONT-END UNIT (W02-0699-05)						
D1 -3			1SV110	DIODE		
TR1			2SK439	TRANSISTOR		
TR2 ,3			2SC3391	TRANSISTOR		
TR4			2SC3494	TRANSISTOR		
FM FRONT-END UNIT (W02-0700-05)						
D1 -4			1SV110	DIODE		
TR1			3SK85	TRANSISTOR		
TR2 ,3			2SC3391	TRANSISTOR		
TR2 ,3			2SC535	TRANSISTOR		
TR4			2SC2839	TRANSISTOR		
TR5			2SK241	TRANSISTOR		
TR5			2SK439	TRANSISTOR		

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KR-A56R

SPECIFICATIONS

AUDIO SECTION

Power Output

55 watts per channel minimum RMS, both channel driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.08% total harmonic distortion.

60 watts per channel minimum RMS, both channel driven into 8 ohms at 1 kHz with no more than 0.08 % total harmonic distortion

Total Harmonic Distortion
(20 Hz-20,000 Hz, 8 ohms) ..... 0.08% at 55W
(1 kHz, 8 ohms) ..... 0.01% at 55W
Intermodulation distortion ..... 0.08% at 55W
Input sensitivity/Impedance
PHONO (MM) ..... 3.0 mV/47 kohms
CD/AUX, TAPE, VIDEO ..... 200 mV/47 kohms
Frequency Response
PHONO (RIAA standard Curve) ..... 20 Hz-20,000 Hz... ±0.5 dB
TAPE, CD/AUX ..... 10 Hz-70,000 Hz... $^{+0\ dB}_{-3\ dB}$
Signal to Noise Ratio
PHONO (MM) ..... 73 dB
TAPE, CD/AUX, VIDEO ..... 100 dB
Graphic Equalizer
Center Frequency ..... 63 Hz, 300 Hz, 1kHz, 3 kHz, 10 kHz
Control Range ..... ±12 dB

FM TUNER SECTION

Tuning Frequency Range ..... 87.5 MHz-108 MHz
Antenna Impedance ..... 300 ohms balanced
75 ohms unbalanced
Unsable Sensitivity ..... 11.2 dBf (2.0 μV)
50 dB Quieting Sensitivity
MONO ..... 17.2 dBf (4 μV)
STEREO ..... 38.2 dBf (45 μV)
Signal to Noise Ratio at 65 dBf
MONO ..... 76 dB
STEREO ..... 72 dB
Total Harmonic Distortion at 1,000 Hz
MONO 0.2%
STEREO 0.3%
Frequency Response ..... 30 Hz-15,000 Hz $^{+0.5\ dB}_{-2.5\ dB}$
Stereo Separation ..... 40 dB at 1,000 Hz
Selectivity ..... 53 dB at 400 kHz
Capture Ratio ..... 1.2 dB
Image Rejection Ratio .... 40 dB
IF Rejection Ratio ..... 86 dB
Spurious rejection Ratio. 80 dB
AM Suppression Ratio .... 57 dB

AM TUNER SECTION

Tuning Range ..... 530 kHz-1,610 kHz (with the AM tuning interval set at 10 kHz)
531 kHz-1,610 kHz (with the AM tuning interval set at 9 kHz)
Unsable Sensitivity ..... 15 μV (440 μV/m)
Signal to Noise Ratio ..... 50 dB
Total Harmonic Distortion ..... 0.3 %
Selectivity ..... 25 dB

GENERAL

Power Requirement ..... 60 Hz, 120V... CANADA
U.S.A. Model
60/50 Hz, 110-120/220-240V... Others
Power Consumption 2.5A
AC Outlet ..... Switched × 3
(Total 600 W)
Dimensions ..... **W**:420 mm (16-9/16")
H :109 mm (4-5/16")
D :229mm (9")
Weight ..... Net. 5.3 kg (11.7 lb)

Note:
We follow a policy of continuous advancements in development. For this reason specifications may be changed without noice.

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Kenwood poursuit une politique de progrès constants en ce qui doncerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige, Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

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